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NATIONAL DEFENSE INDUSTRIAL ASSOCIATION

STRENGTH THROUGH INDUSTRY & TECHNOLOGY

Ninth Annual
Special Operations / Low Intensity Conflict
(SO/LIC)
Symposium and Exhibition

"National Security Strategy in Transition"

The Critical Role of Special Operations Forces (SOF) in Preparing Now for an Uncertain Future

PROCEEDINGS

Sponsored by:
Special Operations / Low Intensity Conflict
(SO/LIC) Division
The National Defense Industrial Association (NDIA)

The Hyatt Regency Hotel

Crystal City, Arlington, Virginia

February 17 -19, 1998

Event #888

19980220 001

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NATIONAL DEFENSE INDUSTRIAL ASSOCIATION
STRENGTH THROUGH INDUSTRY & TECHNOLOGY

2111 Wilson Boulevard, Suite 400
Arlington, Virginia 22201-3061
Tel: (703) 522-1820 • Fax: (703) 522-1885
Web Page: http://www.ndia.org

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NINTH ANNUAL SO/ LIC SYMPOSIUM & EXHIBITION

"National Security Strategy in Transition"

The Critical Role of Special Operations Forces (SOF) in Preparing Now for an Uncertain Future

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OPENING REMARKS--NDIA SO/LIC SYMPOSIUM, 1998

MG William C Moore, US Army, Retired
Chairman, SO/LIC Division

Good morning and welome to the 9th Annual SO/LIC Symposium sponsored by the National Defense Industrial Association--recently formed by the merger of ADPA and NSIA--a union that has already proven a benefit to the SO/LIC community

I thank you for your attendance at this Symposium, which indicates the great support and interest that is extended to the SO/LIC component for our national strategy and associated national security programs. Represented among everyone here are many from industry who are teamed with our SO/LIC forces in providing the superior capability which our nation now possesses. From industry also comes the pledge to continue to help field the greatest SOF in the world. This Symposium is a vehicle by which all involved in SO/LIC can meet, exchange information and address the the issues of the SO/LIC battlefield and of our SOF as they look to the challenges of the future.

The SO/LIC Division is privileged to organize and host this Symposium--about which I would like to make a few comments.

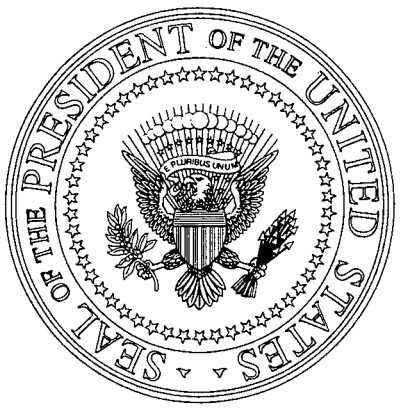
First.....This Symposium is designed to consider how to "prepare now for an uncertain future", which is one of the principal objectives of our current national strategy--as cited in the President's strategy, the National Military Strategy and the many subsequent strategy-related documents, such as the Defense Guidance, QDR and the recently released report from the National Defense Panel. Despite the myriad of strategy and policy statements, national military strategy remains in transition. Symposia like this one and interested participants like each of you can have an influence. Collectively we are a recognized voice and our discussions over the next two days will reach strategy and policy decision makers.

Second.....NDIA through its SO/LIC Division and this Symposium has the honor to acknowledge and recognize the service of many of our SO/LIC warriors for their outstanding personal contributions. Tonight at our Banquet, awards will be made to over a dozen personnel from all the services for special SO/LIC acheivement. Also will we honor three notable leaders of SO/LIC for a lifetime of service by the award of our R Lynn Rylander Award. Recepients this year are The Honorable John O Marsh, Jr and posthumously, Rear Admiral Irve C (Chuck) Le Moyne and Colonel George T Talbot. Please attend the banquet and help us honor all these great SO/LIC leaders.

Third.....As you may know the work of the SO/LIC Division is carried on by a group of volunteers, like myself and the members of the Executive Board, who are listed in the Symposium program. I invite you to assist us in our programs supporting SOF and SO/LIC. The Executive Board meets monthly to stay informed on SO/LIC matters and

to plan the activities of the Division. Our objective is to continue to be a facilitator of coordination between government, industry, media and academia on matters relating to SO/LIC. With the indorsement of NDIA we are in the process of relocating the headquarters of the North Carolina Chapter of NDIA from the Raleigh area to Fayetteville where it can become closer to SOF and better represent our mutual interests. Perhaps in the near future we can have this Symposium in Fayetteville--take it to the "field". We continue to look for new ways to better represent both the government and industry on behalf of SOF. The SO/LIC Division publishes a newsletter as a forum for continuing discussion on SO/LIC matters. Everyone attending this Symposium will be on our mailing list. Also the NDIA National Defense magazine regularly highlights articles of SO/LIC significance, as in this month's issue. Through the many venues of NDIA, the SO/LIC Division has become the voice of the community--a community which we hope to continually broaden. Your help is invited--with more hands and heads we can do more. If you wouldlike to become more active in our programs please contact me here at the Symposium or leave a message for me at NDIA.

William C Moore



A NATIONAL SECURITY STRATEGY FOR A NEW CENTURY

THE WHITE HOUSE
MAY 1997

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Preface

Protecting the security of our nation—our people, our territory and our way of life—is my foremost mission and constitutional duty. As we enter the twenty-first century, we have an unprecedented opportunity to make our nation safer and more prosperous. Our military might is unparalleled; a dynamic global economy offers increasing opportunities for American jobs and American investment; and the community of democratic nations is growing, enhancing the prospects for political stability, peaceful conflict resolution and greater hope for the people of the world.

At the same time, the dangers we face are unprecedented in their complexity. Ethnic conflict and outlaw states threaten regional stability; terrorism, drugs, organized crime and proliferation of weapons of mass destruction are global concerns that transcend national borders; and environmental damage and rapid population growth undermine economic prosperity and political stability in many countries.

This report, submitted in accordance with Section 603 of the Goldwater-Nichols Defense Department Reorganization Act of 1986, sets forth a national security strategy to advance our national interests in this era of unique opportunities and dangers. It is premised on the belief that both our domestic strength and our leadership abroad are essential to advancing our goal of a safer, more prosperous America. Building upon America's unmatched strengths, the strategy's three core objectives are:

- To enhance our security with effective diplomacy and with military forces that are ready to fight and win.
- To bolster America's economic prosperity.
- To promote democracy abroad.

To achieve these objectives, we will remain engaged abroad and work with partners, new and old, to promote peace and prosperity. We can—and we must—use America's leadership to harness global forces of integration, reshape existing security, economic and political structures, and build new ones that help create the conditions necessary for our interests and values to thrive.

As we approach this century's end, the blocs and barriers that divided the world for fifty years largely have fallen away. Our responsibility is to build the world of tomorrow by embarking on a period of construction—one based on current realities but enduring American values and interests. In constructing international frameworks, institutions and understandings to guide America and the world far into the next century, the following strategic priorities advance our core national security objectives:

First, we must help foster a peaceful, undivided, democratic Europe. When Europe is stable and at peace, America is more secure. When Europe prospers, so does America.

NATO was created to strengthen Europe's west. Now, it can do the same for Europe's east. This summer, we will hold a special summit to continue the process of adapting our alliance to new demands while enlarging it to take in new members from among Europe's new democracies. Countries that were once our adversaries now can become our allies. We aim to build a strong NATO-Russia partnership that provides for consultation and, when possible, joint action on common security challenges and contributes to a democratic Russia's active participation in the post-Cold War European security system. We will strengthen the Partnership for Peace Program and create an enhanced NATO-Ukraine relationship.

Second, America must look across the Pacific as well as across the Atlantic. Over the last four years, we have made significant progress in creating a stable, prosperous Asia Pacific community. In this endeavor, we must

reinforce our close ties to Japan, the Republic of Korea, Australia and our ASEAN friends and allies. As we strengthen our security and promote our prosperity, we must remain alert to the challenges that remain. We must ensure that North Korea continues to implement its agreement to freeze and dismantle its nuclear weapons program, and we must fund America's contribution to this effort. Together with South Korea, we must advance peace talks with North Korea and bridge that armed divide. And we must sustain the remarkable growth fueled by increasingly open markets and the integration that all the region's economies are attaining through the Asia Pacific Economic Cooperation forum.

We must pursue a deeper dialogue with China. An isolated, inward-looking China is not good for America or the world. A China playing its rightful role as a responsible and active member of the international community is. I will visit China and I have invited China's president to come here not because we agree on everything, but because engaging China is the best way to work on common challenges such as ending nuclear testing—and to deal frankly with fundamental differences such as human rights.

Third, the American people must prosper in the global economy. We have made it our mission to tear down trade barriers abroad in order to create jobs at home. Over the last four years we have concluded more than 200 trade agreements, each one of which opened a foreign market more widely to American products. Today, America is again the world's number one exporter—leading in agriculture and aviation, automobiles and entertainment, semiconductors and software.

Now, we must build on that momentum, especially in Asia and Latin America. If we fail to act now, these emerging economies will find their economic future with other nations—and we will be left behind. That is why I am traveling to Latin America and the Caribbean this year—to continue the work we began at the Summit of the Americas in Miami in building a community of democracies linked by shared values and expanding trade. We must continue to help nations embrace open markets, improve living standards and advance the rule of law and we must support the World Bank and other organizations that multiply our contributions to progress many times over.

Fourth, America must continue to be an unrelenting force for peace—from the Middle East to Haiti, from Northern Ireland to Central Africa. Taking reasonable risks for peace keeps us from being drawn into far more costly conflicts. It encourages other nations to focus on future hopes, not past hatreds. It creates partners willing to seize the opportunities of a new century. The habits of peace crafted in Bosnia must take hold, helped by the NATO-led Stabilization Force that is allowing reconstruction and reconciliation to accelerate.

Fifth, we must continue to move strongly to counter growing dangers to our security: weapons of mass destruction, terrorism, international crime, drugs, illegal arms trafficking, and environmental damage. We are acting to prevent nuclear materials from falling into the wrong hands and to rid the world of antipersonnel landmines and chemical weapons. The American people are more secure because we won historic accords to end nuclear testing and to ban chemical weapons. Together with Russia, we are working to cut our nuclear arsenals by 80 percent from their Cold War height within a decade. We are working with others, with renewed intensity, to improve civil aviation security, to defeat drug traffickers and to stop terrorists before they act—and to hold them accountable if they do. We are protecting the global environment—managing our forests, stopping the spread of toxic chemicals, working to close the hole in the ozone layer, reducing the greenhouse gasses that challenge our health as they change our climate.

Finally, we must have the diplomatic and military tools to meet all these challenges. We must maintain a strong and ready military. We will achieve this by selectively increasing funding for weapons modernization and taking care of our men and women in uniform. They are doing a remarkable job for America—America must do right by them.

We must also renew our commitment to America's diplomacy—to ensure that we have the superb diplomatic representation that our people deserve and our interests demand. Every dollar we devote to preventing conflicts, promoting democracy, and stopping the spread of disease and starvation brings a sure return in security and savings. Yet international affairs spending today totals just one percent of the federal budget—a small fraction of what America invested at the start of the Cold War when we chose engagement over isolation. If America is to continue to lead the world by its own example, we must demonstrate our own commitment to these priority tasks. This is also why we must pay our debts and dues to a reforming United Nations.

Inherent in this final priority is the need to examine our overall national security posture, programs, structure and budget. Within the Department of Defense such a review

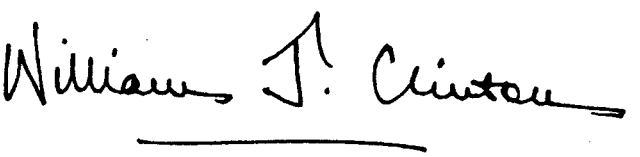
is currently underway and the State Department and other international affairs agencies are reorganizing to confront the pressing challenges of tomorrow. We need to continue looking across our government to see if during this time of transition we are adequately preparing to meet the national security challenges of the next century.

Each of these six priorities is essential to keeping America strong, secure and prosperous and to advancing our national security objectives. Our strategy requires the patient application of American will and resources. We can sustain that necessary investment only with the continued support of the American people and the bipartisan support of their representatives in Congress—a bipartisanship that was clearly displayed in the recent ratification of the Chemical Weapons Convention. The full participation of Congress is essential to the success of our continuing engagement, and I will consult with members of Congress at every step as we formulate and implement American foreign policy.

America has an unparalleled record of international leadership. Through our leadership comes rewards. The more America leads, the more willing others are to share the risks and responsibilities of forging our futures. We have repeatedly seen this over the last four years—in Bosnia and Haiti where we worked with many other nations for peace and democracy, in the Summit of the Americas and APEC Leaders Forum where we agreed with our partners to build a free and open trading system, and in many other instances. Our achievements of the last four years are the springboard for tomorrow's better world.

We are at the dawn of a new century. Now is the moment to be farsighted as we chart a path into the new millennium. As borders open and the flow of information, technology, money, trade, and people across borders increases, the line between domestic and foreign policy continues to blur. We can only preserve our security and well being at home by being actively involved in the world beyond our borders.

The need for American leadership abroad remains as strong as ever. With the support of the American public, I am committed to sustaining our active engagement abroad in pursuit of our cherished goal—a more secure and prosperous America in a more peaceful and prosperous world where democracy and free markets know no limits.



I. Leadership Today—For a Safer, More Prosperous Tomorrow

Our national security strategy must always be judged by its success in meeting the fundamental purposes set out in the Constitution:

> *...provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity,...*

Since the founding of the nation, certain requirements have remained constant. We must protect the lives and personal safety of Americans, both at home and abroad. We must maintain the sovereignty, political freedom and independence of the United States, with its values, institutions and territory intact. And, we must provide for the well-being and prosperity of the nation and its people.

Challenges and Opportunities

The security environment in which we live is dynamic and uncertain, replete with numerous challenges. Ethnic conflict and outlaw states threaten stability in many regions of the world. Weapons of mass destruction, terrorism, organized crime and environmental damage are global concerns that transcend national borders. Yet, this is also a period of great promise. America's core values of representative governance, market economics and respect for fundamental human rights have been embraced by many nations around the world, creating new opportunities to promote peace, prosperity and greater cooperation among nations. Former adversaries now cooperate with us. The dynamism of the global economy is transforming commerce, culture, communications and global relations.

During the first Clinton Administration we assessed America's role in a radically transformed security environment and outlined a national security strategy to advance our interests. Our strategy highlighted that the demise of communism in the former Soviet Union brought with it unprecedented opportunities in global relations as well as a host of threats and challenges with the potential to grow more deadly in a world grown closer. This strategy took into account the revolution in technology that not only enriches our lives, but makes it possible for terrorists, criminals and drug traffickers to challenge the safety of our citizens and the security of our borders in new ways. Our strategy focused on the security implications for both present and long-term American policy raised by transnational problems that once seemed quite distant—such as resource depletion, rapid population growth, environmental degradation and refugee migration. Faced with these circumstances, we did not set objectives for separate and distinct foreign and domestic policies, but rather for economic and security policies that advance our interests and ideals in a world where the dividing line between domestic and foreign policy is increasingly blurred.

These principles continue to guide us at the beginning of the second Clinton Administration and prompt us to make some general observations about America's role in the world in which we live.

Because we are a nation with global interests, we face a variety of challenges to our interests, often far beyond our shores. We must always retain our superior diplomatic, technological, industrial and military capabilities to address this broad range of challenges so that we can respond together with other nations when we can, and alone when we must. We have seen in the past that the international community is often reluctant to act forcefully without American leadership. In many instances, the United States is the only nation capable of providing the necessary leadership for an international response to shared challenges.

The Imperative of Engagement

These observations make our strategic approach clear. First, we must be prepared and willing to use all appropriate instruments of national power to influence the actions of other states and non-state actors. Second, we must have the demonstrated will and capabilities to continue to exert global leadership and remain the preferred security partner for the community of states that share our interests. In short, American leadership and engagement in the world are vital for our security, and the world is a safer place as a result.

Three-quarters of a century ago, the United States squandered Allied victory in World War I when it embraced isolationism and turned inward. After World War II, and in the face of a new totalitarian threat, America accepted the challenge to lead. We remained engaged overseas and, with our allies, worked to create international structures—from the Marshall Plan, the United Nations, NATO and 42 other defense arrangements, to the International Monetary Fund and the World Bank—that enabled us to strengthen our security and prosperity and win the Cold War.

By exerting our leadership abroad, we can make America safer and more prosperous—by deterring aggression, fostering the resolution of conflicts, opening foreign markets, strengthening democracies, and tackling global problems. Without our leadership and engagement, threats would multiply and our opportunities would narrow. Our strategy recognizes a simple truth: we must lead abroad if we are to be secure at home, but we cannot lead abroad unless we are strong at home.

Underpinning that international leadership is the power of our democratic ideals and values. In designing our strategy, we recognize that the spread of democracy supports American values and enhances both our security and prosperity. Democratic governments are more likely to cooperate with each other against common threats and to encourage free and open trade and economic development—and less likely to wage war or abuse the rights of their people. Hence, the trend toward democracy and free markets throughout the world advances American interests. The United States must support this trend by remaining actively engaged in the world. This is the strategy to take us into the next century.

Implementing the Strategy

Though we must always be prepared to act alone, when necessary, or as a leader of an ad hoc coalition that may form around a specific objective, we cannot always accomplish our foreign policy goals unilaterally. An important element of our security preparedness depends on durable relationships with allies and other friendly nations. Accordingly, a central thrust of our strategy is to strengthen and adapt the security relationships we have with key nations around the world and create new structures when necessary. Examples of these efforts include NATO enlargement, the Partnership for Peace, and the commitment by the Asia Pacific Economic Cooperation (APEC) forum and the Summit of the Americas to expand free trade and investment.

At other times we must harness our diplomatic, military and economic strengths to shape a favorable international environment outside of any formal structures. This approach has borne fruit in areas as diverse as the advancement of peace in the Middle East and Northern Ireland, the elimination of nuclear weapons from Ukraine, Kazakstan and Belarus and in our support for the transformation of South Africa, and is further exemplified through our comprehensive assistance package to Russia and other New Independent States (NIS).

In implementing our strategy for a safer, more prosperous tomorrow, we are guided by the strategic priorities President Clinton laid out in his 1997 State of the Union Address:

- foster an undivided, democratic and peaceful Europe
- forge a strong and stable Asia Pacific community
- continue America's leadership as the world's most important force for peace
- create more jobs and opportunities for Americans through a more open and competitive trading system that also benefits others around the world
- increase cooperation in confronting new security threats that defy borders and unilateral solutions
- strengthen the military and diplomatic tools necessary to meet these challenges

As we stand at the edge of a new century, our national security strategy will continue to make a real difference in the lives of our citizens by promoting a world of open societies and open markets that is supportive of U.S.

interests and consistent with American values. We know that there must be limits to America's involvement in the world. We must be selective in the use of our capabilities, and the choices we make always must be guided by advancing our objectives of a more secure, prosperous and free America. But we also recognize that if we withdraw U.S. leadership from the world today, we will have to contend with the consequences of our neglect tomorrow. America cannot walk away from its global interests and responsibilities, or our citizens' security and prosperity will surely suffer.

We also know that our engagement abroad rightly depends on the willingness of the American people and the Congress to bear the costs of defending U.S. interests—in dollars, energy, and, when there is no other alternative, American lives. We must, therefore, foster the broad public understanding and bipartisan congressional support necessary to sustain our international engagement, always recognizing that some decisions that face popular opposition must ultimately be judged by whether they advance the interests of the American people in the long run.

II. Advancing U.S. National Interests

As stated, the goal of the national security strategy is to ensure the protection of our nation's fundamental and enduring needs: protect the lives and safety of Americans; maintain the sovereignty of the United States, with its values, institutions and territory intact; and provide for the prosperity of the nation and its people.

We seek to create conditions in the world where our interests are rarely threatened, and when they are, we have effective means of addressing those threats. In general, we seek a world in which no critical region is dominated by a power hostile to the United States and regions of greatest importance to the U.S. are stable and at peace. We seek a climate where the global economy and open trade are growing, where democratic norms and respect for human rights are increasingly accepted and where terrorism, drug trafficking and international crime do not undermine stability and peaceful relations. And we seek a world where the spread of nuclear, chemical, biological and other potentially destabilizing technologies is minimized, and the international community is willing and able to prevent or respond to calamitous events. This vision of the world is also one in which the United States has close cooperative relations with the world's most influential countries and has the ability to influence the policies and actions of those who can affect our national well-being.

The overall health of the international economic environment directly affects our security, just as stability enhances the prospects for prosperity. This prosperity, a goal in itself, also ensures that we are able to sustain our military forces, foreign initiatives and global influence. It is that engagement and influence that helps ensure the world remains stable so that the international economic system can flourish.

We believe that our strategy will move us closer to the vision outlined above and therefore will achieve our objectives of enhancing our security, bolstering our economic prosperity and promoting democracy.

Enhancing Security

To ensure the safety of our nation, the United States will continue its integrated approach to addressing the numerous threats to our interests and preserve a full range of foreign policy tools. We must maintain superior military forces. Similarly, we must retain a strong diplomatic corps and a foreign assistance program sufficient to maintain American leadership. Our tools of foreign policy must be able to shape the international environment, respond to the full spectrum of potential crises and prepare against future threats. Our military forces will have the ability to respond to challenges short of war, and in concert with regional friends and allies, to win two overlapping major theater wars. We will continue pursuing diplomatic, economic, military, arms control, and nonproliferation efforts that promote stability and reduce the danger of nuclear, chemical, biological and conventional conflict.

Threats to U.S. Interests

The current era presents a diverse set of threats to our enduring goals and hence to our security. These threats are generally grouped into three, often intertwined, categories:

- **Regional or State-centered Threats:** A number of states still have the capabilities and the desire to threaten our vital interests, through either coercion or cross border aggression. In many cases, these states are also actively improving their offensive capabilities, including efforts to obtain nuclear,

biological or chemical weapons. In other cases, unstable nations, internal conflicts or failed states may threaten to further destabilize regions where we have clear interests.

- **Transnational Threats:** Some threats transcend national borders. These transnational threats, such as terrorism, the illegal drug trade, illicit arms trafficking, international organized crime, uncontrolled refugee migrations, and environmental damage threaten American interests and citizens, both directly and indirectly. Not all of these are new threats, but advances in technology have, in some cases, made these threats more potent.
- **Threats from Weapons of Mass Destruction:** Weapons of mass destruction pose the greatest potential threat to global security. We must continue to reduce the threat posed by existing arsenals of such weaponry as well as work to stop the proliferation of advanced technologies that place these destructive capabilities in the hands of parties hostile to U.S. and global security interests. Danger exists from outlaw states opposed to regional and global security efforts and transnational actors, such as terrorists or international crime organizations, potentially employing nuclear, chemical or biological weapons against unprotected peoples and governments.

The Need for Integrated Approaches

No one nation can defeat these threats alone. Accordingly, a central thrust of our strategy is to adapt our security relationships with key nations around the world to combat these threats to common interests. We seek to strengthen cooperation with friends and allies to address these threats by, for example, denying terrorists safe havens, cracking down on money laundering and tightening intelligence cooperation to prevent weapons proliferation, terrorist attacks and international crime.

Building effective coalitions of like-minded nations is not enough. That is why we are continuing to strengthen our own capabilities: so we can more effectively lead the international community in responding to these threats, and act on our own when we must. Our response to these threats is not limited exclusively to any one agency within the U.S. Government. National security preparedness—particularly in this era when domestic and foreign policies are increasingly blurred—crosses agency lines; thus, our approach places a premium on integrated interagency efforts to enhance U.S. security.

Many aspects of our strategy are focused on *shaping* the international environment to prevent or deter threats. Diplomacy, international assistance, arms control programs, nonproliferation initiatives, and overseas military presence are examples of shaping activities. A second element of this integrated approach is the requirement to maintain an ability to *respond* across the full spectrum of potential crises, up to and including fighting and winning major theater wars. Finally, we must *prepare* today to meet the challenges of tomorrow's uncertain future.

Shaping the International Environment

The United States has a range of tools at its disposal with which to shape the international environment in ways favorable to U.S. interests and global security. Shaping activities enhance U.S. security by promoting regional security and preventing and reducing the wide range of diverse threats outlined above. These measures adapt and strengthen alliances, maintain U.S. influence in key regions and encourage adherence to international norms. When signs of potential conflict emerge, or potential threats appear, we undertake initiatives to prevent or reduce these threats. Such efforts might aim to discourage arms races, halt the proliferation of weapons of mass destruction and reduce tensions in critical regions. Shaping activities take many forms.

...through Diplomacy

Diplomacy is our first line of defense against threats to national and international security. The daily business of diplomacy conducted through our missions and representatives around the world is a vital shaping activity. These efforts are essential to sustaining our alliances, forcefully articulating U.S. interests, resolving regional disputes peacefully, averting humanitarian catastrophe, deterring aggression against the United States and our friends and allies, creating trade and investment opportunities for U.S. companies, and projecting U.S. influence worldwide.

One of the lessons that has been repeatedly driven home is the importance—and cost effectiveness—of preventive diplomacy in dealing with conflict and complex emergencies. It is far more effective to help prevent nations

from failing than to rebuild them after an internal crisis; far more beneficial to help people stay in their homes than it is to feed and house them in refugee camps; and far less taxing for relief agencies and international organizations to strengthen the institutions of conflict resolution than to heal ethnic and social divisions that have already exploded into bloodshed. In short, while crisis management and crisis resolution are necessary tasks for our foreign policy, preventive diplomacy is obviously far preferable.

Military force and the credible possibility of its use are essential to defend our vital interests and keep America safe. But force alone can be a blunt instrument, and there are many problems it cannot solve. To be most effective, force and diplomacy must complement and reinforce each other—for there will be many occasions and many places where we must rely on diplomatic shaping activities to protect and advance our interests.

...through International Assistance

From the U.S.-led mobilization to rebuild post-war Europe to the more recent creation of export opportunities across Asia, Latin America and Africa, U.S. foreign assistance has helped expand free markets, assisted emerging democracies, contained environmental hazards and major health threats, slowed population growth and defused humanitarian crises. Crises are averted—and U.S. preventive diplomacy actively reinforced—through U.S. sustainable development programs that promote voluntary family planning, basic education, environmental protection, democratic governance and rule of law, and the economic empowerment of private citizens.

When combined effectively with other bilateral and multilateral activities, U.S. initiatives reduce the need for costly military and humanitarian interventions. Where foreign aid succeeds in consolidating free market policies, substantial growth of American exports has frequently followed. Where crises have occurred, actions such as the Greater Horn of Africa Initiative have helped staunch mass human suffering and created a path out of conflict and dislocation through targeted relief. Other foreign aid programs have worked to help restore elementary security and civic institutions.

...through Arms Control

Arms control efforts are another important shaping tool. By increasing transparency surrounding the size and structure of military forces, arms control efforts build national confidence, reduce incentives to initiate an attack and allow countries to direct resources to safer, more productive relations. Our various arms control initiatives are an essential prevention measure that can yield disproportionately significant results, often eliminating the need for a more substantial U.S. response later.

Reductions in strategic offensive arms and the steady shift toward less destabilizing systems remain essential to our strategy. Under START II, the United States and Russia will each be limited to no more than 3,000-3,500 total deployed strategic nuclear warheads. START II ratification by Russia will open the door to the next round of strategic arms control.

At the Helsinki Summit, Presidents Clinton and Yeltsin agreed to START III guidelines that if adopted will, by the end of 2007, cap the number of strategic nuclear warheads deployed in each country at 2,000-2,500—reducing both our arsenals by 80 percent from Cold War heights. They agreed that START III will, for the first time, require the U.S. and Russia to destroy nuclear warheads, not only the missiles, aircraft and submarines that carry them, and they opened the door to possible reductions in shorter-range nuclear weapons. Also at Helsinki, the Presidents reaffirmed their commitment to the Anti-Ballistic Missile (ABM) Treaty and the necessity of effective theater missile defenses and reached agreement on demarcation between systems to counter strategic and theater ballistic missiles.

Regional and multilateral arms control efforts, such as achieving a comprehensive global ban on antipersonnel landmines as soon as possible, strengthening the 1972 Biological Weapons Convention (BWC) and implementing and enforcing the Chemical Weapons Convention (CWC) increase the security of our citizens and prevent or limit conflict. That is why the Administration aggressively pursued Senate ratification of the CWC. Similarly, Senate approval of the CFE Flank Agreement is important because the agreement underpins new negotiations to adapt the 30-nation CFE Treaty to the changing European security environment. And, Senate approval of the Comprehensive Test Ban Treaty (CTBT) banning all nuclear test explosions is also a priority objective.

Other arms control objectives include securing Indian and Pakistani accession to the CTBT to allow that treaty to enter into force; obtaining Senate approval of protocols to the South Pacific Nuclear Free Zone Treaty and

the African Nuclear Weapons Free Zone Treaty, and protocols to the Convention on Conventional Weapons dealing with landmines and blinding lasers; and obtaining Russian, Ukrainian and Belarusian ratification of the Open Skies Treaty.

We also promote, through international organizations such as the Organization for Security and Cooperation in Europe (OSCE), implementation of confidence and security-building measures in regions of tension and instability—even where we are not formal parties to such agreements. Agreements in the Balkans as mandated by the Dayton Accords are excellent examples.

...through Nonproliferation Initiatives

Nonproliferation initiatives, which deter the use of weapons of mass destruction (WMD)—nuclear, biological and chemical—and stem their spread and that of their component parts or delivery systems, enhance global security. The Administration supports international treaty regimes that prohibit the acquisition of weapons of mass destruction, including the Nuclear Non-Proliferation Treaty (NPT), the CWC and the BWC. We also seek to achieve a Fissile Material Cutoff Treaty to cap the nuclear materials available for weapons purposes.

The Administration also seeks to limit access to sensitive equipment and technologies through participating in and fostering the efforts of multilateral regimes, including the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies, the Australia Group (for chemical and biological weapons), the Missile Technology Control Regime (MTCR), and the Nuclear Suppliers Group. We are working to harmonize national export control policies, increase information sharing, refine control lists and expand cooperation against illicit transfers.

Regional nonproliferation efforts are particularly critical in three proliferation zones: the Korean Peninsula, where the 1994 Agreed Framework requires North Korea's full compliance with its nonproliferation obligations; the Middle East and Southwest Asia, where we encourage regional arms control agreements that address legitimate security concerns of all parties and continue efforts to thwart and roll back Iran's development of weapons of mass destruction and Iraq's efforts to reconstitute its programs; and South Asia, where we seek to persuade India and Pakistan to bring their nuclear and missile programs into conformity with international nonproliferation standards.

Through programs, such as the Nunn-Lugar Cooperative Threat Reduction Program and other initiatives, we aim to prevent the theft or diversion of WMD or related material or technology. We are purchasing tons of highly enriched uranium from dismantled Russian nuclear weapons for conversion into commercial reactor fuel for U.S. use. And we are also working together to redirect former Soviet facilities and scientists from military to peaceful purposes.

We are working with China to resolve a number of important proliferation issues and they have committed not to transfer MTCR-controlled missiles. Our priority now is to gain their agreement to implement national export controls that meet international standards.

...through Military Activities

The U.S. military plays an essential role in building coalitions and shaping the international environment in ways that protect and promote U.S. interests. Through means such as the forward stationing or deployment of forces, defense cooperation and security assistance, and training and exercises with allies and friends, our armed forces help to promote regional stability, deter aggression and coercion, prevent and reduce conflicts and threats, and serve as role models for militaries in emerging democracies.

Our military promotes regional stability in numerous ways. In Europe, East Asia and Southwest Asia, where the U.S. has clear, vital interests, the American military helps assure the security of key allies and friends. We are continuing to adapt and strengthen our alliances and coalitions to meet the challenges of an evolving security environment and to improve other countries' peacekeeping capabilities. With countries that are neither staunch friends nor known foes, military cooperation often serves as a positive means of engagement, building security relationships today in an effort to keep these countries from becoming adversaries tomorrow.

Deterrence of aggression and coercion on a daily basis is another crucial aspect of the military's shaping role. Our ability to deter potential adversaries in peacetime rests on several factors, particularly on our demonstrated will and ability to uphold our security commitments when they are challenged. We have earned this reputation through both our declaratory policy, which clearly communicates costs to potential adversaries, and the credibility of our conventional warfighting capability, as embodied in forces and equipment strategically stationed or

deployed forward, our rapidly deployable stateside-based forces, our ability to gain timely access to critical infrastructure overseas, and our demonstrated ability to form and lead effective military coalitions.

U.S. military forces prevent and reduce a wide range of potential conflicts in key regions. An example of such an activity is our deployment to the Former Yugoslav Republic of Macedonia to prevent the spread of violence to that country.

Our armed forces also serve as a role model for militaries in emerging democracies around the world. Through modest military-to-military activities and increasing links between the U.S. military and the military establishments of Partnership for Peace nations, for instance, we are helping to transform military institutions in central and eastern Europe.

Finally, our nuclear deterrent posture is one of the most visible and important examples of how U.S. military capabilities can be used effectively to deter aggression and coercion. Nuclear weapons serve as a hedge against an uncertain future, a guarantee of our security commitments to allies and a disincentive to those who would contemplate developing or otherwise acquiring their own nuclear weapons. In this context, the United States must continue to maintain a robust triad of strategic forces sufficient to deter any hostile foreign leadership with access to nuclear forces and to convince it that seeking a nuclear advantage would be futile.

Responding to Crises

Because our shaping efforts alone cannot guarantee the international environment we seek, the United States must be able to respond to the full spectrum of crises that may arise. Our resources are finite, however, so we must be selective in our responses, focusing on challenges that most directly affect our interests and engaging where we can make the most difference. Our response might be diplomatic, economic, law enforcement, or military in nature—or, more likely, some combination of the above. We must use the most appropriate tool or combination of tools—acting in alliance or partnership when our interests are shared by others, but unilaterally when compelling national interests so demand.

Since there are always many demands for U.S. action, our national interests must be clear. These interests fall into three categories. The first includes *vital interests*—those of broad, overriding importance to the survival, safety and vitality of our nation. Among these are the physical security of our territory and that of our allies, the safety of our citizens, and our economic well-being. We will do whatever it takes to defend these interests, including—when necessary—using our military might unilaterally and decisively.

The second category includes situations where *important national interests* are at stake. These interests do not affect our national survival, but they do affect our national well-being and the character of the world in which we live. In such cases, we will use our resources to advance these interests insofar as the costs and risks are commensurate with the interests at stake. Our intervention in Haiti and participation in NATO operations in Bosnia are relevant examples.

The third category involves *humanitarian interests*. In the event of natural or manmade disasters or gross violations of human rights, our nation may act because our values demand it. Moreover, in such cases, the force of our example bolsters support for our leadership in the world. Whenever possible, we seek to avert such humanitarian disasters through diplomacy and cooperation with a wide range of partners, including other governments, international institutions and nongovernmental organizations. By doing so, we may not only save lives but also prevent the drain on resources caused by intervention in a full-blown crisis.

The U.S. military is at once dangerous to our enemies and a bulwark to our friends. Though typically not the best tool to address long-term humanitarian concerns, under certain circumstances our military may provide appropriate and necessary humanitarian assistance. Those circumstances include: a natural or manmade disaster that dwarfs the ability of the normal relief agencies to respond; the need for relief is urgent and the military has a unique ability to respond quickly; and the U.S. mission is narrowly defined with minimal risk to American lives. In these cases, the United States may intervene when the costs and risks are commensurate with the stakes involved and when there is reason to believe that our action can make a real difference. Such efforts by the United States and the international community will be limited in duration and designed to give the affected country the opportunity to put its house in order. In the final analysis, the responsibility for the fate of a nation rests with its own people.

One final consideration regards the central role the American people rightfully play in how the United States

wields its power abroad: the United States cannot long sustain a commitment without the support of the public, and close consultations with Congress are important in this effort. When it is judged in America's interest to intervene, we must remain clear in purpose and resolute in execution.

Transnational Threats

Today, American diplomats, law enforcement officials, military personnel and others are called upon to respond to assorted transnational threats that have moved to center stage with the Cold War's end. Combating these dangers—which range from terrorism, international crime, and trafficking in drugs and illegal arms, to environmental damage and intrusions in our critical information infrastructures—requires far-reaching cooperation among the agencies of our government as well as with other nations.

The United States will continue appropriate sharing of intelligence and information with other nations to counter terrorism, corruption and money-laundering activities, and fight drug trafficking. We will also further seek to prevent arms traders from fueling regional conflicts and subverting international embargoes and will impose additional sanctions on states that sponsor terrorism. International cooperation to combat these transnational threats will be vital for building security in the next century.

Terrorism

U.S. counterterrorism approaches are meant to prevent, disrupt and defeat terrorist operations before they occur, and, if terrorist acts do occur, to respond overwhelmingly, with determined efforts to bring the perpetrators to justice. Our policy to counter international terrorists rests on the following principles: (1) make no concessions to terrorists; (2) bring all pressure to bear on state sponsors of terrorism; (3) fully exploit all available legal mechanisms to punish international terrorists; and (4) help other governments improve their capabilities to combat terrorism.

The U.S. has made concerted efforts to deter and punish terrorists and remains determined to apprehend those who terrorize American citizens. Similarly, as long as terrorists continue to target American citizens and interests, we reserve the right to strike at their bases and attack assets valued by those who support them—a right we exercised in 1993 with the attack against Iraqi intelligence headquarters in response to Baghdad's assassination attempt against former President Bush.

Countering terrorism effectively requires day-to-day coordination within the U.S. Government and close cooperation with other governments and international organizations. We have seen positive results from the increasing integration of intelligence, diplomatic, investigative and prosecutorial activities among the Departments of State, Justice, Defense, Treasury, Transportation, and the CIA. The Administration is also working with Congress to increase the ability of these agencies to combat terrorism through augmented funding and manpower.

Placing terrorism at the top of the diplomatic agenda has increased international information sharing and law enforcement efforts. At the 1996 Lyon Summit the industrial powers joined in condemning Iran's support for terrorism and continued efforts to achieve global adoption of all current counterterrorism treaties by the year 2000. Last year Congress and the President worked together to enact the Iran-Libya Sanctions Act which will increase economic pressure on these two state sponsors of terrorism. We further seek to uncover, reduce or eliminate foreign terrorist capabilities in our country; eliminate terrorist sanctuaries; counter state-supported terrorism and subversion of moderate regimes through a comprehensive program of diplomatic, economic and intelligence activities; improve aviation security worldwide and at U.S. airports; ensure better security for all U.S. transportation systems; and improve protection for our personnel assigned overseas.

Drug Trafficking

The U.S. response to the global scourge of drug abuse and drug trafficking is to integrate domestic and international efforts to reduce both the demand and the supply of drugs. Its ultimate success will depend on concerted efforts by the public, all levels of government and the private sector together with other governments, private groups and international organizations.

Domestically, we seek to educate and enable America's youth to reject illegal drugs; increase the safety of America's citizens by substantially reducing drug-related crime and violence; reduce health and social costs to the public of illegal drug use; and shield America's air, land and sea frontiers from the drug threat.

Abroad, the U.S. National Drug Control Strategy seeks to reduce cultivation of drug producing crops, interdict the

flow of drugs at the source and in the transit zone (particularly in Central and South America, the Caribbean and Mexico), and stop drugs from entering our country. The strategy includes efforts to strengthen democratic institutions; root out corruption; destroy trafficking organizations; prevent money laundering; eradicate illegal drug crops in this hemisphere, Asia and the Middle East; and encourage alternate crop development. The United States is aggressively engaging international organizations, financial institutions and non-governmental organizations in counternarcotics cooperation. For instance, the President has invoked the International Emergency Economic Powers Act (IEEPA) to attack the finances, companies and individuals owned or controlled by the Cali Cartel as well as other Colombian drug cartels, freezing their assets in the United States, identifying front companies and barring Americans from doing business with them.

Our strategy recognizes that at home and abroad, prevention, treatment and economic alternatives must go hand-in-hand with law enforcement and interdiction. Long-term efforts will be maintained to help nations develop economies with fewer market incentives for producing drugs. We have also increased efforts abroad to foster public awareness and support for foreign governments' efforts to reduce drug abuse.

International Organized Crime

International organized crime undermines fragile new democracies as well as developing nations and challenges our own security. In parts of the former Soviet Union, for instance, organized crime poses a threat to our interests because of the potential for theft and smuggling of inherited nuclear materials remaining in those countries.

To fight organized crime, we seek to mount an international effort to combat the major international criminal cartels, most notably those based in Italy, the former Soviet Union, Colombia, Southeast Asia, and Nigeria. In particular, in the context of the P-8 and bilaterally, we are promoting legal assistance and extradition cooperation. We also are working to combat money laundering and other criminal activities in the major offshore financial centers, create indigenous criminal investigation and prosecution capabilities in key countries and implement specific plans to address several other financial crimes, including counterfeiting, large-scale international fraud and embezzlement, computer intrusion of banks and cellular phones, and alien smuggling.

The Administration has launched a major initiative to stop criminal organizations from moving funds through the international financial system. We will identify and put on notice nations that fail to bring their financial systems into conformity with international standards and appropriate Financial Action Task Force (FATF) recommendations. We also seek to target the criminal enterprises that are developing the gray market trade in illegal weapons. By using forged documents and diverting deliveries of armaments, these networks serve criminals and terrorists alike and move weapons to areas of conflict and instability, often subverting international arms embargoes.

International organized crime organizations target nations whose law enforcement agencies lack the capacity and experience to stop them. To help the new democracies of Central Europe, the United States and Hungary established an international law enforcement academy in Budapest. The President proposed last year at the United Nations to establish a network of such centers around the world to share the latest crime-fighting techniques and technology.

Environmental and Security Concerns

Environmental threats do not heed national borders and can pose long-term dangers to our security and well-being. Natural resource scarcities often trigger and exacerbate conflict. Environmental threats such as climate change, ozone depletion and the transnational movement of dangerous chemicals directly threaten the health of U.S. citizens. We must work closely with other countries to respond aggressively to these and other environmental threats.

Decisions today regarding the environment and natural resources can affect our security for generations; consequently, our national security planning is incorporating environmental analyses as never before. In addition, we have a full diplomatic agenda, working unilaterally, regionally and multilaterally to forge agreements to protect the global environment.

Smaller-Scale Contingencies

When efforts to deter an adversary occur in the context of a crisis, they become the leading edge of crisis response. In this sense, deterrence straddles the line between shaping the international environment and responding to crises. Deterrence in crisis generally involves signaling the United States' commitment to a

particular country or interest by enhancing our warfighting capability in the theater. Forces in or near the theater may be moved closer to the crisis and other forces rapidly deployed to the area. The U.S. may also choose to make additional declaratory statements to communicate the costs of aggression or coercion to an adversary, and in some cases may choose to employ U.S. forces in a limited manner to underline the message and deter further adventurism.

The U.S. military conducts smaller-scale contingency operations to vindicate national interests. These operations encompass the full range of military operations short of major theater warfare, including humanitarian assistance, peacekeeping, disaster relief, no-fly zones, reinforcing key allies, limited strikes, and interventions. These operations will likely pose the most frequent challenge for U.S. forces and cumulatively require significant commitments over time. These operations will also put a premium on the ability of the U.S. military to work closely and effectively with other U.S. Government agencies, nongovernmental organizations, regional and international security organizations and coalition partners.

Not only must the U.S. military be prepared to successfully conduct multiple concurrent operations worldwide, it must also be prepared to do so in the face of challenges such as terrorism, information operations, and the threat or use of weapons of mass destruction. U.S. forces must also remain prepared to withdraw from contingency operations if needed to deploy to a major theater war. Accordingly, U.S. forces will remain multi-mission capable and will be trained and managed with multiple missions in mind.

At times it will be in our national interest to proceed in partnership with others to preserve, maintain and restore peace. American participation in peace operations takes many forms, such as the NATO coalition in Bosnia, the American-led UN force in Haiti and our involvement in a multilateral coalition in the Sinai.

The question of command and control in contingency operations is particularly critical. Under no circumstances will the President ever relinquish his constitutionally mandated command authority over U.S. forces, but there may be times when it is in our interest to place U.S. forces under the temporary operational control of a competent allied or United Nations commander. This is consistent with well-established practice—from the siege of Yorktown during the Revolutionary War to the battles of Operation DESERT STORM.

Major Theater Warfare

At the high end of responding to crises is fighting and winning major theater wars. This mission will remain the ultimate test of our *Total Force*—our active and reserve military components—and one in which it must always succeed. For the foreseeable future, the United States, in concert with regional allies, must remain able to deter credibly and defeat large-scale, cross-border aggression in two distant theaters in overlapping time frames.

As long as countries like Iraq and North Korea remain capable of threatening vital U.S. interests, this requirement is only prudent. Maintaining such a capability should, when we are heavily engaged in one region, deter opportunism elsewhere and provide a hedge against the possibility that we might encounter larger or more difficult than expected threats. A strategy for deterring and defeating aggression in two theaters ensures we maintain the flexibility to meet unknown future threats, while continued global engagement helps preclude such threats from developing.

Fighting and winning major theater wars entails three particularly challenging requirements. First, we must maintain the ability to rapidly defeat initial enemy advances short of enemy objectives in two theaters, in close succession. The U.S. must maintain this ability to ensure that we can seize the initiative, minimize territory lost before an invasion is halted, and ensure the integrity of our warfighting coalitions.

Second, the United States must plan and prepare to fight and win under conditions where an adversary may use asymmetric means against us—unconventional approaches that avoid or undermine our strengths while exploiting our vulnerabilities. This is of particular importance and a significant challenge. Because of our dominance in the conventional military arena, adversaries who challenge the United States are likely to do so using asymmetric means, such as WMD, information operations or terrorism.

Finally, our military must also be able to transition to fighting major theater wars from a posture of global engagement—from substantial levels of peacetime engagement overseas as well as multiple concurrent smaller-scale contingencies. Withdrawing from such operations would post significant political and operational challenges. Ultimately, however, the United States must accept a degree of risk associated with withdrawing from contingency operations and engagement activities

in order to reduce the greater risk incurred if we failed to respond adequately to major theater wars.

Our priority is to shape effectively the international environment so as to deter the onset of major theater wars. Should deterrence fail, however, the United States will defend itself, its allies and partners with all means necessary.

Preparing Now for an Uncertain Future

At the same time we address the problems of today, we must prepare *now* for tomorrow's uncertain future. This requires that we support shaping and responding requirements in the near term, *while at the same time* evolving our unparalleled capabilities to ensure we can effectively shape and respond to meet future challenges. Key to this evolution is the need to foster innovation in new operational concepts, capabilities, technologies and organizational structures; modernize our forces; and take prudent steps today to position ourselves to respond more effectively to unlikely but significant future threats.

We must continue aggressive efforts to construct appropriate twenty-first century national security programs and structures. The Quadrennial Defense Review is doing this within the Department of Defense, and the State Department and other international affairs agencies are similarly reorganizing to confront the pressing challenges of tomorrow as well as those we face today. We need to continue looking across our government to see if during this time of transition we are adequately preparing to meet the national security challenges of the next century.

It is critical that we renew our commitment to America's diplomacy—to ensure we have the diplomatic representation required to support our global interests. This is central to retaining our ability to remain an influential voice on international issues that affect our well-being. We will preserve that influence so long as we retain the diplomatic capabilities, military wherewithal and economic base to underwrite our commitments credibly.

The United States is approaching the point where a major modernization of our military forces is required. The military procurement buys of the late-70s and early-80s permitted us to defer large-scale recapitalization of the force for over a decade. In order to maintain the technological superiority of U.S. forces, we must selectively increase modernization funding to both introduce new systems, and replace aging Cold War-era equipment as it reaches the end of its service life.

Closely related to our modernization efforts is the requirement to invest in selected research and prototype systems while monitoring trends in likely future threats. These prudent steps provide insurance against the possibility that some of our efforts to shape the international environment in ways favorable to U.S. interests do not succeed. Although such insurance is certainly not free, it is a relatively inexpensive way to manage risk in an uncertain, resource-constrained environment—that is, the risk of being unprepared to meet a new threat, the risk of developing the wrong capabilities, and the risk of producing a capability too early and having it become obsolete by the time it is needed.

The United States cannot hedge against every conceivable future threat. Instead, we should focus our insurance efforts on threats that, while unlikely, would have highly negative consequences for U.S. security and would be very expensive to counter were they to emerge. Our current research and development effort to position the U.S. to deploy a credible national missile defense system within three years of a deployment decision is an example of this approach.

Without preparing adequately today to face the pressing challenges of tomorrow, our ability to exert global leadership and to create international conditions conducive to achieving our national goals would be in doubt. Thus, we must strive to strike the right balance between the near-term requirements of shaping and responding and the longer-term requirements associated with preparing now for national security challenges in the twenty-first century.

Overarching Capabilities

Critical to our nation's ability to shape the international environment and respond to the full spectrum of crises—today and tomorrow—are technologies, capabilities and requirements to enable the continued worldwide application of U.S. national power.

Intelligence

Our intelligence capabilities are critical instruments for implementing our national security strategy. Comprehensive intelligence capabilities are needed to provide warning of threats to U.S. national security, give analytical support to the policy and military communi-

ties, provide near-real time intelligence in times of crisis while retaining global perspective, and to identify opportunities for advancing our national interests.

Today, intelligence operations must cover a wider range of threats and policy needs than ever before and work more closely with policymaking agencies. We place a high priority on preserving and enhancing those intelligence collection and analytic capabilities that provide information on states and groups that pose the most serious threats to U.S. security.

Current intelligence priorities include states whose policies and actions are hostile to the United States; countries that possess strategic nuclear forces or control nuclear weapons, other WMD or nuclear fissile materials; transnational threats; potential regional conflicts that might affect U.S. national security interests; intensified counterintelligence against foreign intelligence collection inimical to U.S. interests; and threats to U.S. forces and citizens abroad.

Intelligence support is also required to develop and implement U.S. policies to promote democracy abroad, protect the environment, identify threats to modern information systems, monitor arms control agreements, and support worldwide humanitarian efforts. The fusion of all intelligence disciplines will provide the most effective collection and analysis of data on these subjects.

Space

We are committed to maintaining our leadership in space. Uninhibited access to and use of space is essential for preserving peace and protecting U.S. national security as well as civil and commercial interests. It is essential to our ability to shape and respond to current and future changes in the international environment. Our space policy objectives include deterring threats to our interest in space and defeating hostile efforts against U.S. space assets if deterrence fails, preventing the spread of weapons of mass destruction to space, and enhancing global partnerships with other space-faring nations across the spectrum of economic, political and security issues.

Missile Defense

We have highly effective missile defense development programs designed to protect our country, deployed U.S. forces and our friends and allies against ballistic missiles armed with conventional weapons or WMD. These programs and systems complement and strengthen our deterrence and nonproliferation efforts by reducing incentives for potential proliferators to develop or use WMD. Significantly, Presidents Clinton and Yeltsin agreed at the Helsinki Summit to maintain the ABM Treaty as a cornerstone of strategic stability, yet adapt it to meet the threat posed by shorter-range missiles—a threat we seek to counter through our theater missile defense (TMD) systems. The agreement is consistent with planned U.S. TMD programs, all of which have been certified by the United States as compliant with the ABM Treaty.

Although the intelligence community does not believe it likely that any hostile state will develop an intercontinental-range missile capability that could threaten our nation in the foreseeable future, we are developing missile defense programs that position the U.S. to deploy a credible national missile defense system should a threat materialize.

Information Infrastructure

The national security posture of the United States is increasingly dependent on our information infrastructures. These infrastructures are highly interdependent and are increasingly vulnerable to tampering and exploitation. Concepts and technologies are being developed and employed to protect and defend against these vulnerabilities; we must fully implement them to ensure the future security of not only our national information infrastructures, but our nation as well.

National Security Emergency Preparedness

We will do all we can to prevent destructive forces such as terrorism, WMD use, sabotage of our information systems and natural disasters from endangering our citizens. But if an emergency occurs, we must also be prepared to respond effectively to protect lives and property and ensure the survival of our institutions and national infrastructure. National security emergency preparedness is imperative, and comprehensive, all-hazard emergency planning by Federal departments and agencies continues to be a crucial national security requirement.

Promoting Prosperity

The second core objective of our national security strategy is to promote America's prosperity through efforts both at home and abroad. Our economic and security interests are inextricably linked. Prosperity at home

depends on our leadership in the global economy. The strength of our diplomacy, our ability to maintain an unrivaled military, the attractiveness of our values abroad—all depend in part on the strength of our economy.

Enhancing American Competitiveness

Our primary economic goal remains to strengthen the American economy. We will continue to pursue deficit reduction with a goal of balancing the federal budget by 2002. By cutting the deficit and balancing the budget, government borrows less, freeing capital for private sector investment. We seek to create a business environment in which the innovative and competitive efforts of the private sector can flourish; encourage the development, commercialization and use of civilian technology; invest in a world-class infrastructure for the twenty-first century, including the national information infrastructure for our knowledge-based economy; invest in education and training to develop a workforce capable of participating in our rapidly changing economy; and continue our efforts to open foreign markets to U.S. goods and services.

Enhancing Access to Foreign Markets

Our prosperity as a nation in the twenty-first century also depends upon our ability to compete and win in international markets. The rapidly expanding global economy presents enormous opportunities for American companies and workers. Over the next decade the global economy is expected to grow at three times the rate of the U.S. economy. Growth will be particularly powerful in emerging markets. Our economic future will increasingly rest on tapping into these global opportunities.

In a world where over 95 percent of the world's consumers live outside the United States, we must export to sustain economic growth at home. If we do not seize these opportunities, our competitors surely will. We must therefore continue working hard over the next four years to secure and enforce agreements that enable Americans to compete fairly in foreign markets.

Trade negotiating authority is essential for advancing our nation's economic interests. Congress has consistently recognized that the President must have the authority to break down foreign trade barriers and create good jobs. Accordingly, the Administration will work with Congress to fashion an appropriate grant of fast track negotiating authority.

Over the next four years, the Administration will continue to press our trading partners—multilaterally, regionally and bilaterally—to expand export opportunities for U.S. workers, farmers and companies. We will position ourselves at the center of a constellation of trade relationships—such as the World Trade Organization, APEC, the Transatlantic Marketplace and the Free Trade Area of the Americas (FTAA). We will seek to negotiate agreements in sectors where the U.S. is most competitive, as we did in the Information Technology Agreement and the WTO Telecommunications Services Agreement. We will remain vigilant in enforcing the trade agreements reached with our trading partners. That is why the U.S. Trade Representative and the Department of Commerce created offices in 1996 dedicated to ensuring foreign governments are fully implementing their commitments under these agreements.

World Trade Organization (WTO). The successful conclusion of the Uruguay Round of negotiations under the General Agreement on Tariffs and Trade significantly strengthened the world trading system. The U.S. economy is expected to gain over $100 billion per year in GDP once the Uruguay Round is fully implemented. The Administration remains committed to carrying forward the success of the Uruguay Round and to the success of the WTO as a forum to resolve disputes openly.

We have completed the Information Technology Agreement which goes far toward eliminating tariffs on high technology products and amounts to a global annual tax cut of $5 billion. We also concluded a landmark WTO agreement that will dramatically liberalize world trade in telecommunications services. Under this agreement, covering over 99 percent of WTO member telecommunications revenues, a decades old tradition of telecommunications monopolies and closed markets will give way to market opening deregulation and competition—principles championed by the United States. We would use fast track authority to negotiate agreements in other such sectors where the U.S. is most competitive. We will attempt to conclude by the end of 1997 a new agreement to open trade in financial services. The WTO agenda also envisions further negotiations to reform agriculture and liberalize trade in services in 1999.

In the WTO we also have a full agenda of accession negotiations—countries seeking to join the WTO. As always, the United States is setting high standards for accession in terms of adherence to the rules and market access. Accessions offer an opportunity to help ground new economies in the rules-based trading system. This is

why we will take an active role in the accession process dealing with the 28 applicants currently seeking WTO membership. The Administration believes that it is in our interest that China become a member of the WTO; however, we have been steadfast in leading the effort to ensure that China's accession to the WTO occurs on a commercial basis. China maintains many barriers that must be eliminated, and we need to ensure that necessary reforms are agreed to before accession occurs. Russia's WTO accession could play a crucial part in confirming, and assuring, Russia's transition to a market economy, enhanced competitiveness and successful integration into the world economy.

North America: Since the passage of the North American Free Trade Agreement (NAFTA), our exports to Mexico have risen significantly while the Agreement helped stabilize Mexico through its worst financial crisis in modern history. Considering Mexico is our third-largest trading partner, it is imperative that its market remain open to the United States and NAFTA helps to ensure that. We will continue working with Mexico and interested private parties to consolidate NAFTA's gains and continue the mutually beneficial trade with our largest trading partner and neighbor to the north, Canada.

Latin America: Latin America has become the second fastest growing economic region in the world, and by 2010, our exports to Latin America and Canada will likely exceed those to Europe and Japan combined. In 1994 hemispheric leaders committed to negotiate the FTAA by 2005; since then, considerable progress has been made in laying the groundwork. We are also committed to delivering on the President's promise to negotiate a comprehensive free trade agreement with Chile because of its extraordinary economic performance and its logical position as our next trade partner in this hemisphere. Our ability to do so with fast track negotiating authority in hand will be viewed as a litmus test for trade expansion and U.S. interest in leading the hemisphere toward the creation of the FTAA.

Asia Pacific: Our economic strength depends on our ability to seize opportunities in the Asia Pacific region. This region is the world's fastest-growing economic area with half of the world's GDP (including the U.S., Canada and Mexico). Fully 60 percent of U.S. merchandise exports went to APEC economies in 1996—30 percent to Asian countries. U.S. initiatives in APEC will open new opportunities for economic cooperation and permit U.S. companies to expand their involvement in substantial infrastructure planning and construction throughout the region. While our progress in APEC has been gratifying, we will explore options to encourage all Asia Pacific nations to pursue open markets.

- **China:** The emergence of a politically stable, economically open and secure China is in America's interest. Our focus will be on integrating China into the market-based world economic system. An important part of this process will be opening China's highly protected market through lower border barriers and removal of distorting restraints on economic activity. We have negotiated landmark agreements to combat piracy and advance the interests of our creative industries. We have also negotiated—and vigorously enforced—agreements on textile trade.
- **Japan:** The Administration continues to make progress with Asia's largest economy in increasing market access. We have reached market access agreements with Japan covering a range of key sectors, from autos and auto parts to telecommunications and intellectual property rights. While our exports to Japan are at record levels, we must now ensure that these agreements are fully implemented. We must also encourage domestic demand-led growth in Japan and further deregulation that opens more sectors of Japan's economy to competition.

Europe: Together, Europe and the United States produce over half of all global goods and services. As part of the New Transatlantic Agenda launched at the 1995 U.S.-EU Summit in Madrid, the U.S. and the EU agreed to take concrete steps to reduce barriers to trade and investment through the creation of a New Transatlantic Marketplace, with a focus on non-tariff barriers which impede transatlantic commerce. The Transatlantic Business Dialogue comprised of American and European business leaders contributed to the Summit's priorities by focusing on an agreement necessary to reduce barriers in U.S. trade and investment. Our business community strongly supports our current negotiations to complete Mutual Recognition Agreements to eliminate redundant testing and certification requirements between the United States and the EU in sectors where trade totals over $40 billion.

Through OECD negotiations of a Multilateral Agreement on Investment, we are seeking to establish clear legal standards on expropriation, access to binding international arbitration for disputes and unrestricted investment-related transfers across borders. These negotiations help further our efforts related to investment issues in Asia and in the WTO.

Export Strategy and Advocacy Program

The Administration created America's first national export strategy, reforming the way government works with the private sector to expand exports. The new Trade Promotion Coordination Committee (TPCC) has been instrumental in improving export promotion efforts, coordinating our export financing, implementing a government-wide advocacy initiative and updating market information systems and product standards education.

The export strategy is working, with the United States regaining its position as the world's largest exporter. While our strong export performance has supported millions of new, export-related jobs, we must export more in the years ahead if we are to further strengthen our trade balance position and raise living standards with high-wage jobs. Our objective remains to expand U.S. exports to over $1.2 trillion by the year 2000, which will mean over five million new American jobs and a total of over 16 million jobs supported by exports.

Export Control Reform

Through reforming the export licensing system, we seek to support U.S. exporters' efforts to compete on a level playing field with their foreign competition by removing unnecessarily burdensome licensing requirements left over from the Cold War. We seek continued appropriate refinements to the dual-use and munitions licensing process and enactment of a new Export Administration Act, while still ensuring that our nonproliferation interests are safeguarded. We will also, as part of our multilateral export control efforts, push partners to adopt and follow similar practices to advance mutually beneficial nonproliferation efforts.

Other Economic Objectives

We are confronting bribery and corruption by seeking to have OECD members criminalize the bribery of foreign officials and eliminate the tax deductibility of foreign bribes and by promoting greater transparency in government procurement regimes. To date, our efforts on procurement have been concentrated in the World Bank and the regional development banks. Our initiative at the recent WTO meeting in Singapore to pursue an agreement on transparency in all WTO member procurement regimes should make an additional important contribution to our efforts.

On trade and labor we have made important strides. The Singapore WTO Ministerial endorsed the importance of core labor standards sought by the United States since the Eisenhower Administration—the right to organize, the right to bargain collectively and prohibitions against child labor and forced labor. We will continue pressing for a working party on labor issues in the WTO.

We continue seeking assurances that liberalization of trade does not come at the expense of environmental protection. Our leadership in the Uruguay Round negotiations led to the incorporation of environmental provisions into the WTO Agreements and creation of the Committee on Trade and Environment, where governments continue the task of ensuring that trade and environment are mutually supportive. In addition, with U.S. leadership, countries participating in the FTAA are engaged in sustainable development initiatives to ensure that economic growth does not come at the cost of environmental protection.

Strengthening Macroeconomic Coordination

Our strategy recognizes that as national economies become more integrated internationally, the United States cannot thrive in isolation from developments abroad. Working with other countries and international economic institutions, we have improved our capacity to prevent and mitigate international financial crises. These efforts include the creation of a more effective early warning and prevention system with an emphasis on improved disclosure of financial and economic data; a doubling of resources available to respond in the event crises occur; and a review of procedures that might facilitate the orderly resolution of international debt crises. The G-7 has also made progress on improving cooperation among financial regulatory authorities and strengthening supervision of major financial institutions. These steps should help limit the risk of major financial institution collapse and limit damage to other institutions in the event a crisis occurs.

The G-7 is also promoting a range of World Bank and regional development bank reforms that the United States has been urging for a number of years. Key elements include substantially increasing the share of resources devoted to basic social programs that reduce poverty; safeguarding the environment; supporting development of the private sector and open markets; promotion of good governance, including measures to fight corruption; and internal reforms of the Multilateral

Development Banks (MDBs) to make them more efficient. Furthermore, international financial institutions such as the International Monetary Fund (IMF) and MDBs have played a strong role in recent years in countries and regions of key interest to the United States, such as Russia, the Middle East, Haiti and Bosnia.

Providing for Energy Security

The United States depends on oil for more than 40 percent of its primary energy needs. Roughly half of our oil needs are met with imports, and a large, though diminishing, share of these imports come from the Persian Gulf area. However, we are also undergoing a fundamental shift in our reliance on imported oil away from the Middle East. Venezuela is now the number one foreign supplier to the United States; Canada, Mexico and Venezuela combined supply more than twice as much oil to the United States as the Arab OPEC countries; and Venezuela and Colombia are each undertaking new oil production ventures. The Caspian Basin, with potential oil reserves of 200 billion barrels, also promises to play an increasingly important role in meeting rising world energy demand in coming decades. While we must keep these developments in mind, we cannot lose sight of the fact that for the long term, the vast majority of the proven oil reserves still reside in the Middle East and that the global oil market is largely interdependent.

Over the longer term, U.S. dependence on access to these foreign oil sources will be increasingly important as our resources are depleted. The U.S. economy has grown roughly 75 percent since the first oil shock; during that time our oil consumption has remained virtually stable but domestic oil production has declined. High oil prices did not generate enough new oil exploration and discovery to sustain production levels from our depleted resource base. Conservation measures notwithstanding, the United States has a vital interest in ensuring access to this critical resource.

Promoting Sustainable Development Abroad

Sustainable development improves the prospects for democracy in developing countries and expands the demand for U.S. exports. It alleviates pressure on the global environment, reduces the attraction of the illegal drug trade and improves health and economic productivity.

Rapid urbanization is outstripping the ability of many nations to provide jobs, education and other services to their citizens. The continuing poverty of a quarter of the world's people leads to hunger, malnutrition, economic migration and political unrest. New diseases, such as AIDS, and other epidemics that can spread through environmental damage, threaten to overwhelm the health facilities of developing countries, disrupt societies and stop economic growth.

U.S. foreign assistance focuses on four key elements of sustainable development: broad-based economic growth, the environment, population and health, and democracy. We will continue to advocate environmentally sound private investment and responsible approaches by international lenders. The MDBs are now placing increased emphasis upon sustainable development in their funding decisions, including assisting borrowing countries to better manage their economies. The Global Environmental Facility provides a source of financial assistance to the developing world for climate change, biodiversity and oceans initiatives that will benefit all the world's citizens.

Environment and Sustainable Development

Environmental and natural resource issues can impede sustainable development efforts and promote regional instability. That is why the U.S. will aggressively lead efforts to address this issue at the June 1997 UN General Assembly Special Session on Environment and Development. Environmental damage in countries of the NIS and Central and Eastern Europe continues to impede their ability to emerge as prosperous, independent countries. In addition, the effects of climate change and ozone depletion know no borders and can pose grave dangers to our nation and the world. We seek to accomplish the following:

- forge an international consensus to address the challenge of global climate change, as evidenced by threats such as rising sea levels, the spread of tropical disease and more frequent and severe storms;
- achieve increased compliance with the Montreal Protocol through domestic and multilateral efforts aimed at curbing illegal trade in ozone depleting substances;
- implement the UN Straddling Stocks Agreement, ratify the Law of the Sea Convention and help to promote sustainable management of fisheries worldwide;

- implement the Program of Action on population growth developed at the 1994 Cairo Conference;
- expand bilateral forest assistance programs and promote sustainable management of tropical forests;
- focus technical assistance and encourage non-governmental environmental groups to provide expertise to the NIS and Central and Eastern European nations that have suffered the most acute environmental crises;
- achieve Senate ratification of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes;
- lead a renewed global effort to address population problems and promote international consensus for stabilizing world population growth; and
- achieve Senate ratification of the Biodiversity Convention and take steps to slow or stop biodiversity loss. These steps include supporting agricultural research to relieve pressures on forests, working with MDBs and others to prevent biodiversity loss in key regions, and use of the Convention on International Trade in Endangered Species (CITES) to protect threatened species.

Promoting Democracy

The third core objective of our national security strategy is to promote democracy and human rights. The number of states moving away from repressive governance toward democratic and publicly accountable institutions is impressive. Since the success of many of those changes is by no means assured, our strategy must focus on strengthening their commitment and institutional capacity to implement democratic reforms.

Emerging Democracies

We seek international support in helping strengthen democratic and free market institutions and norms in countries making the transition from closed to open societies. This commitment to see freedom and respect for human rights take hold is not only just, but pragmatic, for strengthened democratic institutions benefit the U.S. and the world.

By helping consolidate democratic and market reforms in the NIS, we are assisting them to develop into valued diplomatic and economic partners. Our intensified interaction with Ukraine has helped move that country onto the path of economic reform, which is critical to its long-term stability. In addition, our efforts in Russia, Ukraine and elsewhere facilitate our goal of achieving continued reductions in nuclear arms and compliance with international nonproliferation accords.

The new democracies in Central and Eastern Europe are similarly key. Eventual integration into European security and economic organizations, such as NATO and the EU, will help lock in and preserve the impressive progress these nations have made in instituting democratic and market-economic reforms.

Continuing to nurture advances toward democracy and markets in our own hemisphere remains a priority, as reflected by the President's trips to Latin America and the Caribbean this year and the preparations for the Summit of the Americas in Santiago next year. In the Asia Pacific region, economic dynamism is increasingly associated with political modernization, democratic evolution and the widening of the rule of law—and it has global impacts. We are particularly attentive to states whose entry into the camp of market democracies may influence the future direction of an entire region; South Africa now holds that potential with regard to sub-Saharan Africa.

The methods for assisting emerging democracies are as varied as the nations involved. We must continue leading efforts to mobilize international economic and political resources, as we have with Russia, Ukraine and the other NIS. We must take firm action to help counter attempts to reverse democracy, as we have in Haiti, Guatemala and Paraguay. We must give democratic nations the fullest benefits of integration into foreign markets, which is part of the reason NAFTA and the Uruguay Round of GATT ranked so high on our agenda and why we are now working to forge the FTAA. We must help these nations strengthen the pillars of civil society, supporting administration of justice and rule of law programs, assisting the development of democratic civil-military relations and providing human rights training to foreign police and security forces. And we must seek to improve their market institutions and fight corruption and political discontent by encouraging good governance practices.

Adherence to Universal Human Rights and Democratic Principles

At the same time, we must sustain our efforts to press for political liberalization and respect for basic human rights worldwide, including in countries that continue to defy democratic advances. Working through multilateral institutions, the United States promotes universal adherence to international human rights and democratic principles. Our efforts in the United Nations and other organizations are helping to make these principles the governing standards for acceptable international behavior.

We must also work with multilateral institutions to ensure that international human rights principles protect the most vulnerable or traditionally oppressed groups in the world—women, children, workers, refugees and persons persecuted on the basis of their religious beliefs or ethnic descent. To this end, we will seek to strengthen and improve international mechanisms that promote human rights, such as the UN Human Rights Commission, and will intensify our efforts to establish a Permanent Criminal Court to address violations of international humanitarian law—building on the efforts of the International War Crimes Tribunals for the former Yugoslavia and Bosnia.

To focus additional attention on the more vulnerable or traditionally oppressed people, we will seek to spearhead new international initiatives to combat the sexual exploitation of minors, forms of child labor, homelessness among children, violence against women and children, and female genital mutilation. We will encourage governments to not return people to countries where they face persecution—to provide asylum as appropriate, to offer temporary protection to persons fleeing situations of conflict or generalized human rights abuses, and to ensure that such persons are not returned without due consideration of their need for permanent protection. And we will work with international institutions to combat religious persecution.

The United States will continue to speak out against human rights abuses and we will carry on human rights dialogues with countries willing to engage us constructively. In appropriate circumstances, we must be prepared to take strong measures against human rights violators. These include economic sanctions, as have been maintained against Nigeria, Iraq, Burma and Cuba; visa restrictions; and restrictions on the sales of arms that we believe may be used to perpetrate human rights abuses.

Finally, the United States itself must continue to demonstrate its willingness to adhere to international human rights standards. In particular, we must move forward on ratification of the convention prohibiting discrimination against women and the convention on the rights of the child.

Humanitarian Assistance

Our efforts to promote democracy and human rights are complemented by our humanitarian assistance programs, which are designed to alleviate human suffering, to help establish democratic regimes that respect human rights and to pursue appropriate strategies for economic development. These efforts also enable the United States to help prevent humanitarian disasters with far more significant resource implications.

We also must seek to promote reconciliation in states experiencing civil conflict and to address migration and refugee crises. To this end, the United States will provide appropriate financial support and work with other nations and international bodies, such as the International Committee of the Red Cross and the UN High Commissioner for Refugees. We also will assist efforts to protect the rights of refugees and displaced persons and to address the economic and social root causes of internal displacement and international flight. Finally, we will cooperate with other states to curb illegal immigration into this country.

Private firms and associations are natural allies in activities and efforts intended to bolster market economies. We have natural partners in labor unions, human rights groups, environmental advocates, chambers of commerce and election monitors in promoting democracy and respect for human rights and in providing international humanitarian assistance; thus, we should promote democratization efforts through private and nongovernmental groups as well as foreign governments.

Supporting the global movement toward democracy requires a pragmatic and long-term effort focused on both values and institutions. Our goal is a broadening of the community of market democracies, and strengthened international non-governmental movements committed to human rights and democratization.

III. Integrated Regional Approaches

Our policies toward different regions reflect our overall strategy tailored to their unique challenges and opportunities.

Europe and Eurasia

European stability is vital to our own security. Our objective is to complete the construction of a truly integrated, democratic and secure Europe, with a democratic Russia as a full participant. This would complete the mission the United States launched 50 years ago with the Marshall Plan and the creation of the North Atlantic Treaty Organization. NATO remains the anchor of American engagement in Europe and the linchpin of transatlantic security. As a guarantor of European democracy and a force for European stability, NATO must play the leading role in promoting a more integrated, secure Europe prepared to respond to new challenges. We will maintain approximately 100,000 military personnel in Europe to preserve U.S. influence and leadership in NATO, sustain our vital transatlantic ties, provide a visible deterrent, respond to crises and contribute to regional stability. The increasing links between NATO and Partnership for Peace nations form the foundation for Partners to contribute to real-world NATO missions, as many are doing in the Stabilization Force (SFOR) operation in Bosnia.

At the July 1997 NATO Summit in Madrid, the Alliance will move forward on its agenda for NATO's adaptation and enlargement. We will invite one or more aspiring members to begin accession talks, with the goal of full entry for the first new members by NATO's 50th anniversary in 1999. At the same time, we will intensify efforts to work with countries not included in the first group of invitees, such as enhancing the Partnership for Peace, launching the Euro-Atlantic Partnership Council and developing an enhanced NATO-Ukraine relationship.

We also want to finalize various aspects of the Alliance's internal adaptation, including a new command structure and arrangements for a stronger European security and defense identity within—rather than separate from—NATO. Parallel to NATO enlargement, we seek to define a new and coherent NATO-Russia partnership—one that ensures Russia's full participation in the post-Cold War European security system.

Enlarging the Alliance will promote our interests by reducing the risk of instability or conflict in Europe's eastern half. It will help ensure that no part of Europe will revert to a zone of great power competition or a sphere of influence. It will build confidence and give new democracies a powerful incentive to consolidate their reforms. NATO enlargement will not be aimed at replacing one division of Europe with a new one; rather, its purpose is to enhance the security of all European states.

We will also continue to strengthen the OSCE's role in conflict prevention and crisis management and seek closer cooperation with our European partners in dealing with non-military security threats through our New Transatlantic Agenda with the EU.

Balkans: At the same time as we work to construct a comprehensive European security architecture, we must also focus on regional security challenges. We remain committed to the goals of the Dayton Accords. In Bosnia we seek to help create conditions—through political reconciliation and economic revitalization—for a self-sustaining peace, one that can ensure stability in the country and the Balkans as a whole and permit a timely exit of NATO military forces from Bosnia at the end of SFOR's mission. We support the efforts of the International Criminal Tribunal for the former Yugoslavia and aim to see Bosnia's Balkan neighbors embarked on the path of democracy and market reform—including Serbia's restoration of autonomy to Kosovo and the return of civil society and democracy to Albania.

Southeastern Europe: There are significant security challenges in southeastern Europe. The interrelated issues of Cyprus, Greek-Turkish disagreements in the Aegean, and Turkey's relationship with Europe have serious consequences for regional stability and the evolution of European political and security structures; thus, our immediate goals are to stabilize the region by reducing long-standing Greek-Turkish tensions and to pursue a comprehensive settlement on Cyprus. A democratic, secular, stable and Western-oriented Turkey has supported U.S. efforts to enhance stability in Bosnia, the NIS and the Middle East, as well as to contain Iran and Iraq. Its continued ties to the West and its support for our overall strategic objectives in one of the world's most sensitive regions is critical. We continue to support Turkey's active, constructive role within NATO and Europe.

Northern Ireland: In Northern Ireland, we will continue our efforts to encourage an end to the conflict that has claimed more than 3,200 lives over the past 25 years, and are committed to support the efforts of the British and Irish Governments to bring about a just and lasting settlement. The United States will continue to push for real progress, standing with those who take risks for peace and helping bring tangible benefits of peace to those whose lives will be affected.

NIS: The United States has vital security interests in the evolution of Russia, Ukraine and the other NIS into stable, modern democracies, peacefully and prosperously integrated into a world community where representative government, the rule of law, free and fair trade and cooperative security are the norm. An important element in this evolution will be the development of an effective NATO-Russian partnership. In making the most of post-Communist pluralism—providing support to reformers wherever they are to be found, notably including the non-governmental sector and the regions outside national capitals—we must remain steady in pursuing four strategic objectives:

- reducing the threat of nuclear war and the spread of nuclear weapons and materials, as well as other weapons of mass destruction;
- helping the NIS continue their transition toward democratic, market economies integrated into the community of free-trading democracies;
- bringing Russia, Ukraine and the other NIS into a new, post-Cold War European security order; and
- cooperating with all states of the NIS in ending ethnic and regional conflict while bolstering their independence.

The United States strongly supports the process of European integration embodied in the European Union and seeks to deepen our economic partnership with the EU. At the same time, we are encouraging bilateral trade and investment in non-EU countries, while supporting appropriate enlargement of the European Union. We recognize that EU nations face significant economic challenges with nearly 20 million people unemployed, and that economic stagnation has eroded public support for funding outward-looking foreign policies and greater integration. We are working closely with our West European partners to expand employment and promote long-term growth in the G-7, and to support the New Transatlantic Agenda, which moves the U.S.-EU relationship from consultation to joint action on a range of shared interests.

In supporting historic market reforms in Central and Eastern Europe and in the NIS, we both strengthen our own economy and help new democracies take root. Poland, economically troubled as recently as 1989, now symbolizes the new dynamism and rapid growth that extensive, democratic, free market reforms make possible. Today, more than 70 percent of Russia's GDP is generated by the private sector, while Ukraine's economic reforms have helped consolidate Ukrainian statehood and democratization. But much remains to be done to assure durable economic recovery and social protection. We will continue to mobilize the international community to provide structural economic assistance. Through the Gore-Chernomyrdin Commission, the United States is working closely with Russia in priority areas, including defense conversion, the environment, trade and investment, and scientific and technological cooperation.

Ultimately, the success of market reforms in the countries recently emerged from communism will depend more on trade and investment than official aid. One of our priorities, therefore, is to reduce trade barriers. At the Helsinki Summit, Presidents Clinton and Yeltsin defined an ambitious reform agenda covering key tax, energy and commercial laws crucial for Russia to realize its potential for attracting foreign investment. Further, the Presidents outlined steps that would accelerate Russian membership on commercial terms in key economic organizations such as the WTO and the Paris Club. It is in both Russia's interest and ours that we work with the Russian government toward passage of key economic

and commercial legislation, as we continue to support American investment and Russia's integration into various international economic institutions.

Ukraine is also at an important point in its economic transition—one that will affect its integration with Europe and the prosperity of its people. Two challenges stand out: first, to instill respect for the rule of law so that international principles of the marketplace and democratic governance prevail; and, second, to gain international support as it seeks to close down Chornobyl and reform its energy sector. We seek support from the international community to help Ukraine's economic transformation and its goal of attracting foreign investment and stimulating domestic growth.

A stable and prosperous Caucasus and Central Asia will help promote stability and security from the Mediterranean to China and facilitate rapid development and transport to international markets of the large Caspian oil and gas resources, with substantial U.S. commercial participation. While the new states in the region have made progress in their quest for sovereignty, stability, prosperity and a secure place in the international arena, much remains to be done—in particular in resolving regional conflicts such as Nagorno-Karabakh.

Democratic reforms in the NIS and Europe's former communist states are the best answer to the aggressive nationalism and ethnic hatreds unleashed by the end of the Cold War. Already, the prospect of joining or rejoining the Western democratic family has dampened the forces of nationalism and strengthened the forces of democracy and reform in many countries of the region.

The independence, sovereignty and territorial integrity of the twelve NIS, as well as of the three Baltic states, are especially important to American interests. So is their political and economic reform. Our instruments for advancing these goals are our bilateral relationships, our leadership of international institutions and the billions of dollars in private and multilateral resources that we can help mobilize. But the circumstances affecting the smaller countries depend in significant measure on the fate of reform in the largest and most powerful—Russia. The United States will continue to vigorously promote Russian reform and discourage any reversal in the progress that has been made. Our economic and political support for the Russian government depends on its commitment to reform, including democratization, market economics and a foreign policy of comity, especially with respect to other former Soviet republics.

East Asia and the Pacific

Four years ago, President Clinton laid out his vision of a new Pacific community—a vision that links security interests with economic growth and our commitment to democracy and human rights. We now seek to build on that vision, cementing America's role as a stabilizing force in a more integrated Asia Pacific region.

Our military presence has been essential to maintaining the stability that has enabled most nations in the Asia Pacific region to build thriving economies for the benefit of all. To deter regional aggression and secure our own interests, we will maintain an active presence. Our treaty alliances with Japan, South Korea, Australia, Thailand, and the Philippines, and our commitment to keeping approximately 100,000 U.S. military personnel in the region, serve as the foundation for America's continuing security role.

We have supported new regional dialogues—such as the ASEAN Regional Forum (ARF)—on the full range of common security challenges. By meeting on confidence-building measures such as search and rescue cooperation and peacekeeping, the ARF can help enhance regional security and understanding.

Japan: The United States and Japan reaffirmed last year that our bilateral security relationship remains the cornerstone for achieving common security objectives and for maintaining a stable and prosperous environment for the Asia Pacific region as we enter the twenty-first century. This security cooperation extends to promoting regional peace and stability, seeking universal adherence to the Nuclear Non-Proliferation Treaty, and addressing the dangers posed by transfers of destabilizing conventional arms and sensitive dual-use goods and technologies. Our continued progress in assisting open trade between our two countries and our broad-ranging international cooperation exemplified by the Common Agenda provide a sound underpinning for our relations in the next century.

Korean Peninsula: Tensions on the Korean Peninsula remain the principal threat to the peace and stability of the East Asia region. A peaceful resolution of the Korean conflict with a non-nuclear peninsula is in our strategic interest. A parallel strategic interest is the elimination of a chemical/biological threat on the peninsula. A productive North-South dialogue would be a positive step in this direction. We are working to

create conditions of stability by maintaining the U.S.-Republic of Korea treaty alliance and our military presence; freezing and eventually dismantling the North Korean nuclear program under the Agreed Framework; developing bilateral contacts with the North aimed at drawing the North into a set of more normal relations with the region and the rest of the world; and following through on the offer of four-party peace talks among the United States, China, and North and South Korea. Over the next four years, we will maintain solidarity with our South Korean ally, ensure that an isolated and struggling North Korea does not opt for a military solution to its problems, and emphasize America's commitment to shaping a peaceful and prosperous Korean Peninsula. At the same time, we are willing to improve bilateral political and economic ties with the North, commensurate with its continued cooperation to resolve the nuclear issue, engagement in North-South dialogue, continued efforts to recover remains of American servicemen missing since the Korean War, and cessation of its chemical and biological programs and ballistic missile proliferation activities.

China: An overarching U.S. interest is China's emergence as a stable, open, secure and peaceful state. The prospects for peace and prosperity in Asia depend heavily on China's role as a responsible member of the international community. China's integration into the international system of rules and norms will influence its own political and economic development, as well as its relations with the rest of the world. Our success in working with China as a partner in building a stable international order depends on establishing a productive relationship that will build sustained domestic support. We have already enhanced our cooperation in key areas, such as working for peace and stability in Korea, extending the NPT and completing the CTBT, and combating alien smuggling and drugs. Our key security objectives include:

- sustaining the strategic dialogue begun by the recent series of high-level exchanges with attention to core interests on both sides;
- resumption of the cross-Strait dialogue between Beijing and Taipei, and a smooth transition in Hong Kong;
- PRC adherence to international nonproliferation norms, establishment of a comprehensive export control system, and the conditions that would permit implementation of the 1985 agreement on the peaceful use of nuclear energy; and
- the PRC's constructive role in international security affairs through active cooperation in APEC, ARF and the Northeast Asia Security Dialogue.

Southeast Asia: Our strategic interest in Southeast Asia centers on developing regional and bilateral security and economic relationships that assist in conflict prevention and resolution and expand U.S. participation in the region's dynamic growth. Our policy combines two approaches: first, maintaining our increasingly productive relationship with the Association of Southeast Asian Nations (Singapore, Malaysia, Thailand, Indonesia, the Philippines, Brunei, Vietnam)—especially our security dialogue under the ARF; and second, pursuing bilateral objectives with ASEAN's individual members and other Southeast Asian nations, designed to prevent political or military instability, establish market-oriented economic reforms, resist the flow of heroin from Burma, and encourage democratic reforms and improvements in human rights practices. Our security aims in Southeast Asia are twofold: (1) maintaining robust security alliances with Canberra, Manila and Bangkok, as well as sustaining security access arrangements with Singapore and other ASEAN countries; and (2) healthy, pragmatic relations with a strong, cohesive ASEAN capable of supporting regional stability and prosperity.

We are committed to sustaining the Asia Pacific region's remarkable dynamism. Opportunities for economic growth abound in Asia and underlie our strong commitment to multilateral economic cooperation. Today, the 18 member economies of APEC—comprising about one-third of the world's population—produce $13 trillion and export $1.7 trillion of goods annually, about one-half of the global totals. U.S. exports to Asian economies support millions of American jobs, while U.S. direct investments in Asia represent about one-fifth of total U.S. direct foreign investment. A prosperous and open Asia Pacific is key to the economic health of the United States. Annual APEC leaders meetings are a vivid testament to the possibilities of stimulating regional economic growth and cooperation—fostering trade and investment liberalization, while at the same time enhancing political and security ties within the region.

We are also working with major bilateral trade partners to improve trade relations. The United States and Japan have successfully completed over 20 bilateral trade

agreements under the 1993 Framework Agreement, designed to open Japan's markets to U.S. goods. As U.S.-China trade continues to grow, we place a high priority on bilateral and multilateral trade issues, such as intellectual property rights and market access.

Our economic objectives include: continued progress within APEC toward liberalizing trade and investment, increased exports to Asian countries through market-opening measures and leveling the playing field for U.S. business, and WTO accession for the PRC and Taiwan on satisfactory commercial terms.

Some have argued that democracy is unsuited for Asia or at least for some Asian nations—that human rights are relative and that Western nations' support for international human rights standards simply mask a form of cultural imperialism. The democratic aspirations and achievements of Asian peoples themselves prove these arguments incorrect. We will continue to support those aspirations and to promote respect for human rights in all nations.

Each nation must find its own form of democracy, and we respect the variety of democratic institutions that have emerged in Asia. But there is no cultural justification for tyranny, torture or the denial of fundamental freedoms. Our strategy includes efforts to:

- pursue a constructive, goal-oriented approach to achieving progress on human rights and rule of law issues with China;
- foster a meaningful dialogue between the ruling authorities in Burma and the democratic opposition;
- promote improved respect for human rights and strengthened democratic processes in Indonesia and political reconciliation in East Timor;
- build democratic institutions and encourage respect for human rights in Cambodia; and
- promote improved respect for human rights in Vietnam and achieve the fullest possible accounting of missing U.S. service members.

The Western Hemisphere

The end of armed conflict in Central America and other improvements in regional security have coincided with remarkable political and economic progress throughout the hemisphere. Our hemisphere enters the twenty-first century with an unprecedented opportunity to build a future of stability and prosperity—building on the fact that every nation in the hemisphere except Cuba is democratic and committed to free market economies.

We are advancing regional security cooperation in a variety of ways, such as bilateral security dialogues, Organization of American States (OAS) and Summit of the Americas initiatives, regional confidence and security building measures, exercises and exchanges with key militaries, and regular Defense Ministerials. As co-guarantor of the Peru-Ecuador peace process we have brought the parties closer to negotiating a permanent resolution of the decades-old border dispute. And, we are working to ensure a successful passage of stewardship of the Panama Canal to the Panamanian government.

The principal security concerns in the hemisphere are transnational in nature, such as drug trafficking, organized crime and money laundering, illegal immigration, and instability generated from corruption and political or social conflict. Bilaterally and regionally, we seek to eliminate the scourge of drug trafficking which poses a serious threat to the sovereignty, democracy and national security of nations in the hemisphere. As part of our comprehensive partnership with Mexico, we continue to increase counterdrug and law enforcement cooperation, while in the Caribbean we are intensifying a coordinated effort on counternarcotics, law enforcement and gun smuggling.

The 1994 Summit of the Americas in Miami produced hemispheric agreement on a package of measures that included continued economic reform and enhanced cooperation on issues such as the environment, counternarcotics and anti-corruption. Celebrating the region's embrace of democracy and free markets, the President used that historic event to commit the U.S. to a more mature and cooperative relationship with the hemisphere. The Summit's centerpiece was the leaders' commitment to negotiate the Free Trade Area of the Americas by 2005 and other steps to ensure that democracy's benefits are shared by all.

The Summit brought a surge in hemispheric cooperation on issues such as energy, financial integration and the environment where U.S. agencies have used the Summit Action Plan to establish new relationships with their Latin American and Caribbean counterparts. The hemispheric response to the 1996 coup attempt in Paraguay—a response led by the OAS, members of the

Southern Cone Common Market (MERCOSUR) and the U.S.—also demonstrated the degree to which our democracy and economic integration agendas have become mutually reinforcing. Having opened a new chapter in U.S. relations with Latin America and the Caribbean, we must carry forward the momentum to the 1998 Summit in Chile and continue building towards the Miami vision of an integrated hemisphere of free market democracies. The Administration seeks to do its part in advancing this vision by consolidating NAFTA's gains, obtaining congressional fast track negotiating authority and negotiating a comprehensive free trade agreement with Chile.

At the same time, we must be sensitive to the concern by some small states, such as those in the Eastern Caribbean, about the impact of an increasingly integrated and more competitive hemispheric economy. To this end, we must make progress on achieving the benefits of the Caribbean Basin Initiative (CBI) to help prepare that region for participation in the FTAA.

Our ability to sustain the historic progress of the hemispheric agenda depends in part on meeting the challenges posed by weak democratic institutions, spiraling unemployment and crime rates, and serious income disparities. In many Latin American countries, citizens will not fully realize the benefits of political liberalization and economic growth without regulatory, judicial, law enforcement and educational reforms, as well as increased efforts to integrate indigenous populations into the formal economy.

Regarding Cuba, the United States remains committed to promoting a peaceful transition to democracy and forestalling a mass migration exodus that would endanger the lives of migrants and safety of our nation. While maintaining pressure on the regime to make political and economic reforms, we seek to encourage the emergence of a civil society to assist transition to democracy when the change comes. A growing optimism among Cubans that positive change is possible also helps discourage illegal migration. And, as the Cuban people feel greater incentive to take charge of their own future, they are more likely to stay at home and build the informal and formal structures that will make transition easier. Meanwhile, we remain firmly committed to bilateral migration accords that seek to ensure that migration be through legal and safe means.

The restoration of democracy in Haiti remains a shining example of the positive trends in our hemisphere. In Haiti we continue to support respect for human rights and economic growth by a Haitian government capable of managing its own security, paving the way for a Presidential election in 2000 that is free, fair and representative. We are committed to work with our partners in the region and the international community to support Haiti's economic and political development. Haiti will benefit from a Caribbean-wide acceleration of growth and investment, stimulated in part by enhancement of CBI benefits.

Finally, we also seek to strengthen norms for defense establishments that are supportive of democracy, transparency, respect for human rights and civilian control in defense matters. Through continued engagement with regional armed forces, facilitated by our own modest military activities and presence in the region, we are helping to transform military institutions. Through initiatives such as the Defense Ministerial of the Americas and expanded efforts to increase civilian expertise in defense affairs, we are reinforcing the positive trend in civil-military relations.

The Middle East, Southwest and South Asia

The United States has enduring interests in pursuing a just, lasting and comprehensive Middle East peace, ensuring the security and well-being of Israel, helping our Arab friends provide for their security, and maintaining the free flow of oil at reasonable prices. Our strategy reflects those interests and the unique characteristics of the region as we work to extend the range of peace and stability.

The Middle East Peace Process: An historic transformation has taken place in the political landscape of the Middle East: peace agreements are taking hold, requiring concerted implementation efforts. The United States—as an architect and sponsor of the peace process—has a clear national interest in seeing the process deepen and widen to include all Israel's neighbors. We will continue our steady, determined leadership—standing with those who take risks for peace, standing against those who would destroy it, lending our good offices where we can make a difference and helping bring the concrete benefits of peace to people's daily lives. Future progress will require movement in the following inter-related areas:

- continued Israeli-Palestinian engagement on remaining issues in the Interim Agreement, and negotiation of permanent status issues;
- resuming Israeli-Syrian negotiations and beginning Israeli-Lebanese negotiations with the objective of achieving peace treaties; and
- normalization of relations between Arab states and Israel.

Southwest Asia: In Southwest Asia, the United States remains focused on deterring threats to regional stability and protecting the security of our regional partners, particularly from Iraq and Iran. We will maintain our military presence using a combination of air, land and sea forces and the demonstrated ability to reinforce rapidly the region in time of crisis.

We would like to see Iraq's reintegration into the international community; however, we have made clear that Iraq must comply with all relevant United Nations Security Council resolutions. We also remain committed to enforcing the no-fly zones through Operations NORTHERN WATCH and SOUTHERN WATCH. Our policy is directed not against the people of Iraq but against the aggressive behavior of the government. Until that behavior changes, our goal is containing the threat Saddam Hussein poses to Iraq's neighbors, its people, the free flow of Gulf oil and broader U.S. interests in the Middle East.

As for Iran, our policy is aimed at changing the behavior of the Iranian government in several key areas, including its efforts to obtain weapons of mass destruction and missiles, its support for terrorism and groups that oppose the peace process, its attempts to undermine friendly governments in the region, and its development of offensive military capabilities which threaten our Gulf Cooperation Council (GCC) partners and the flow of oil. Pending changes in Iran's behavior, our goal is to contain and reduce its ability to threaten our interests. We also seek to coordinate with key allies to maximize pressures on Iran to change its course.

A key objective of our policy in the Gulf is to reduce the chances that another aggressor will emerge who would threaten the independence of existing states. We will continue to encourage members of the Gulf Cooperation Council to work closely on collective defense and security arrangements, help individual GCC states meet their appropriate defense requirements and maintain our bilateral defense agreements.

Roughly half of our oil needs are met with imports, and a large share of these imports are from the Persian Gulf region. Previous oil shocks and the Gulf War show the impact that an interruption of oil supplies can have on the world's economy. Appropriate responses to events such as Iraq's invasion of Kuwait can limit the magnitude of the crisis. But over the longer term, U.S. dependence on access to these and other foreign oil sources will remain important as our resources are depleted. The United States must remain ever vigilant to ensure unrestricted access to this critical resource. In the Gulf, where global access to critical resources is key, we will continue to demonstrate U.S. commitment and resolve.

South Asia: South Asia has experienced an important expansion of democracy and economic reform. Our strategy is designed to help the peoples of that region enjoy the fruits of democracy and greater stability by helping resolve long-standing conflict and implementing confidence-building measures. The United States has urged India and Pakistan to take steps to reduce the risk of conflict and to bring their nuclear and missile programs into conformity with international standards. Regional stability and improved bilateral ties are also important for America's economic interest in a region that contains a quarter of the world's population and one of its most important emerging markets. We seek to establish relationships with India and Pakistan that are defined in terms of their own individual merits and that reflect the full weight and range of U.S. strategic, political and economic interests in each country. In addition, we seek to work closely with regional countries to stem the flow of illegal drugs from South Asia, most notably from Afghanistan.

We will encourage the spread of democratic values throughout the Middle East and Southwest and South Asia and will pursue this objective by a constructive dialogue with countries in the region. We will promote responsible indigenous moves toward increasing political participation and enhancing the quality of governance and will continue to vigorously challenge many governments in the region to improve their dismal human rights records.

Africa

In recent years, U.S. policies have supported significant changes in Africa: multi-party democracies are more

common; new constitutions have been promulgated; elections are becoming more frequent and open; the press is more free today; and the need for budgetary and financial discipline is better understood. While we will not be able to address every challenge or reap every opportunity Africa poses, we must identify those issues where we can make a difference and which most directly affect our interests and target our resources efficiently.

Serious transnational security threats emanate from Africa, including: state-sponsored terrorism, narcotics trafficking, international crime, environmental damage and disease. These threats can only be addressed through effective, sustained engagement in Africa. We have already made significant progress in countering some of these threats—investing in efforts to combat environmental damage and disease; leading international efforts to halt the proliferation of land mines; securing the indefinite and unconditional extension of the NPT; and supporting establishment of the African Nuclear Weapons Free Zone. We have also worked to counter the proliferation of weapons of mass destruction in Africa as elsewhere. We continue to work for an end to Sudanese support for terrorism, to reduce the flow of narcotics through Africa, to curtail international criminal activity based in Africa and to diminish the influence of Libya and Iran in Africa.

Our policy toward Libya is designed to limit its efforts to obtain WMD, its support for terrorism, its attempts to undermine other governments in the region and its development of military capabilities which threaten its neighbors. In addition, we seek full Libyan compliance with appropriate UN Security Council Resolutions. Pending changes in Libya's behavior, our goal is to reduce its ability to threaten our interests and those of our friends and allies.

One of the key impediments to development in Africa has been the persistence of conflict. Our efforts to resolve conflict include working to achieve lasting peace in Angola and an end to Liberia's civil war. The area with the greatest potential for serious conflict remains the Great Lakes region, which could result in the permanent destabilization of Zaire or a broader regional war. There also remains the risk of another genocide in the Great Lakes region. The United States continues to be actively engaged in trying to negotiate a peaceful resolution to the conflicts in Zaire, Burundi and elsewhere in the region. In 1996, the United States launched an innovative proposal—the African Crisis Response Force (ACRF) initiative—to build African capabilities to conduct effective peacekeeping and humanitarian operations. We will continue working with donor and African partners to turn this concept into reality.

In the broadest terms, we seek a stable, economically dynamic Africa. This will be impossible to achieve unless and until Africa is fully integrated into the global economy. Our aim, therefore, is to assist African nations to implement economic reforms, create favorable climates for trade and investment, and achieve sustainable development. In addition, we encourage U.S. companies to trade with and invest in Africa. To this end, we have proposed a "Partnership for Economic Growth and Opportunity in Africa" to support the economic transformation underway in Africa. The Administration will work closely with Congress to implement key elements of this initiative aimed, in particular, at helping African countries pursuing growth-oriented policies sustain growth and development.

We seek to spur economic growth and promote trade and investment by examining new ways to improve the economic policies of African nations and by sustaining critical bilateral and multilateral development assistance. While further integrating Africa into the global economy has obvious political and economic benefits, it will also directly serve U.S. interests by continuing to expand an already important new market for U.S. exports. The more than 600 million people of sub-Saharan Africa (SSA) represent one of the world's largest remaining untapped markets. The United States exports more to SSA than to all of the former Soviet Union combined; yet, the U.S. enjoys only seven percent market share in Africa. Increasing both the U.S. market share and the size of the African market will bring tangible benefits to U.S. workers and create wealth in Africa.

In Africa as elsewhere, democracies have proved more peaceful, stable and reliable partners and more likely to pursue sound economic policies. We will continue to work to sustain the important progress achieved to date and to broaden the growing circle of African democracies. In addition, we will work with our allies to find an effective formula for promoting stability, democracy and respect for human rights in Nigeria, and also in central Africa where widespread unrest and atrocities continue; to support a sustainable democratic transition in Zaire; and to help South Africa achieve its economic, political and democratic goals by continuing to provide substantial bilateral assistance, providing support through the Binational Commission and by aggressively promoting U.S. trade with and investment in South Africa.

IV. Conclusions

Today, closer to the start of the twenty-first century than to the end of the Cold War, we are embarking on a period of construction to build new frameworks, partnerships and institutions—and adapt existing ones—that strengthen America's security and prosperity. We are working to construct new cooperative security arrangements, rid the world of weapons that target whole populations, build a truly global economy, and promote democratic values and economic reform. Ours is a moment of historic opportunity to create a safer, more prosperous tomorrow—to make a difference in the lives of our citizens.

This promising state of affairs did not just happen, and there is no guarantee that it will endure. The contemporary era was forged by steadfast American leadership over the last half century—through efforts such as the Marshall Plan, NATO, the United Nations and the World Bank. The clear dangers of the past made the need for national security commitments and expenditures obvious to the American people. Today, the task of mobilizing public support for national security priorities is more complicated. The complex array of unique dangers, opportunities and responsibilities outlined in this strategy are not always readily apparent as we go about our daily lives, focused on immediate concerns. Yet, in a more integrated and interdependent world, we must remain actively engaged in world affairs to successfully advance our diplomatic, military and economic interests. To be secure and prosperous, America must continue to lead.

Our international leadership focuses on six strategic priorities. Taken together, these priorities form the roadmap to security, peace and prosperity into the next century:

- Foster a peaceful, undivided, democratic Europe
- Forge a strong and stable Asia Pacific community
- Build a new, open trading system for the twenty-first century—one that benefits America and the world
- Keep America the world's leading force for peace
- Increase cooperation in confronting security threats that disregard national borders
- Strengthen the diplomatic and military tools required to address these challenges

Our engagement abroad requires the active, sustained support of the American people and the bipartisan support of the U.S. Congress. This Administration remains committed to explaining our security interests, objectives and priorities to the nation; to seeking the broadest possible public and congressional support for our security programs and investments; and to exerting our leadership in the world in a manner that reflects our best national values and protects the security of this great nation.

National Military Strategy

of the United States of America

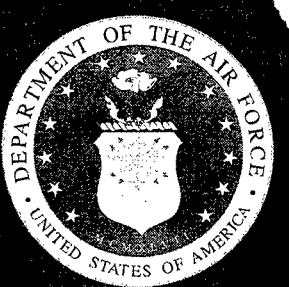
Shape, Respond, Prepare Now: A Military Strategy for a New Era











1997

CHAIRMAN OF THE JOINT CHIEFS OF STAFF

WASHINGTON, D.C. 20318-9999



This document conveys my advice and that of the Joint Chiefs of Staff on the strategic direction of the Armed Forces in implementing the guidance in the President's *A National Security Strategy for a New Century* and the Secretary's *Report of the Quadrennial Defense Review*.

We have just completed a year-long assessment of the strategic environment that underscored the continuing importance of robust American military power. While we no longer face the threat of a rival superpower, there are states and other actors who can challenge us and our allies conventionally and by asymmetric means such as terrorism and weapons of mass destruction. The rise of regional powers is leading to a multipolar world that can be either more secure or more dangerous — hence the importance of the President's "imperative of engagement" described herein.

The military has an important role in engagement — helping to shape the international environment in appropriate ways to bring about a more peaceful and stable world. The purpose of our Armed Forces, however, is to deter and defeat threats of organized violence to our country and its interests. While fighting and winning two nearly simultaneous wars remains the foremost task, we must also respond to a wide variety of other potential crises. As we take on these diverse missions, it is important to emphasize the Armed Forces' core competence: *we fight*. That must be the primary consideration in the development and employment of forces.

The Chiefs and I strongly agree that the force levels recommended by the Secretary in the QDR are the minimum necessary to carry out this strategy at prudent military risk. Further, we must begin to transform them now by exploiting technological advances that are changing warfare. To do this with forces that will remain committed to operational readiness, contingency operations and engagement activities requires a stabilized investment program and a fundamental re-engineering of support infrastructure. It also requires that we sustain the high quality men and women serving in the Armed Forces. They are the indispensable and decisive element in any strategy.

Our best judgment is that this strategy, *Shape, Respond, Prepare Now: A Military Strategy for a New Era*, and the forces for which it calls, will protect the Nation and its interests, and promote a peace that benefits America and all like-minded nations.

JOHN M. SHALIKASHVILI
Chairman
of the Joint Chiefs of Staff

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NATIONAL MILITARY STRATEGY

SEPTEMBER 1997

Executive Summary

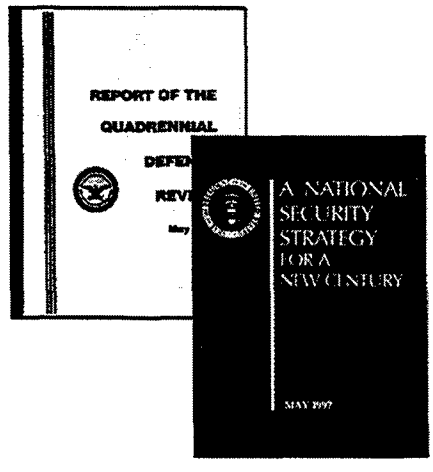
Introduction

The National Military Strategy provides the advice of the Chairman of the Joint Chiefs of Staff (CJCS) in consultation with the Joint Chiefs of Staff and the Combatant Commanders on the strategic direction of the Armed Forces over the next three to five years. In formulating the 1997 National Military Strategy, the CJCS derives guidance from the President's *1997 National Security Strategy* and from the *Quadrennial Defense Review* (QDR) report prepared by the Secretary of Defense.

In both the *1997 National Security Strategy* and the QDR report, the President and the Secretary of Defense introduced an integrated strategic approach embodied by the terms **Shape, Respond** and **Prepare Now**. The 1997 National Military Strategy is based on these concepts. It builds on the premise that the United States will remain globally engaged to **Shape** the international environment and create conditions favorable to US interests and global security. It emphasizes that our Armed Forces must **Respond** to the full spectrum of crises in order to protect our national interests. It further states that as we pursue shaping and responding activities, we must also take steps to **Prepare Now** for an uncertain future.

The Strategic Environment

The United States has entered a period that presents both opportunities and challenges. Our nation is at peace and much of the world embraces the democratic ideals we cherish. The threat of nuclear war has diminished and diplomatic efforts continue to reap benefits in creating a more stable and peaceful world. Nonetheless, there remain a number of uncertainties, including potentially serious threats to America's security. Principal among these are **regional dangers, asymmetric challenges, transnational threats,** and **"wild cards."** This uncertain environment would be even more threatening without the American engagement and leadership that this strategy supports.

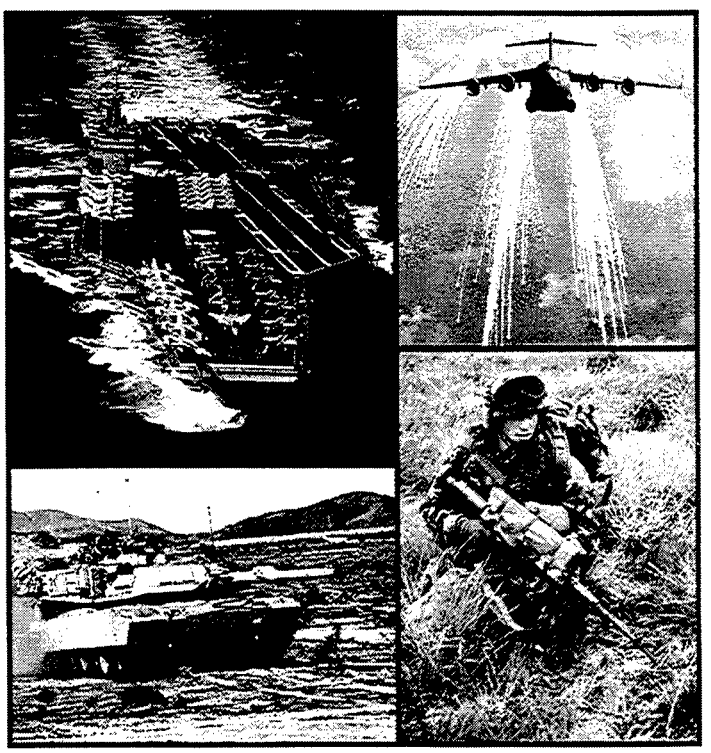


Shape, Respond, and Prepare Now . . .
A Military Strategy for a New Era

The Strategy

National Military Objectives

To defend and protect US national interests, our national military objectives are to **Promote Peace and Stability** and, when necessary, to **Defeat Adversaries.** US Armed Forces advance national security by applying military power as directed to help **Shape** the international environment and **Respond** to the full spectrum of crises, while we also **Prepare Now** for an uncertain future.



Elements of Strategy

Shaping the International Environment. US Armed Forces help shape the international environment through deterrence, peacetime engagement activities, and active participation and leadership in alliances. Critical to deterrence are our conventional warfighting capabilities and our nuclear forces. Deterrence rests on a potential adversary's perception of our capabilities and commitment, which are demonstrated by our ability to bring decisive military power to bear and by communication of US intentions. Engagement activities, including information sharing and contacts between our military and the armed forces of other nations, promote trust and confidence and encourage measures that increase our security and that of our allies, partners, and friends. By increasing understanding and reducing uncertainty, engagement builds constructive security relationships, helps to promote the development of democratic institutions, and helps keep some countries from becoming adversaries tomorrow.

To defend and protect US national interests, our national military objectives are to Promote Peace and Stability and, when necessary, to Defeat Adversaries.

Responding to the Full Spectrum of Crises. The US military will be called upon to respond to crises across the full range of military operations, from humanitarian assistance to fighting and winning major theater wars (MTW), and conducting concurrent smaller-scale contingencies. Our demonstrated ability to rapidly respond and to decisively resolve crises provides the most effective deterrent and sets the stage for future operations if force must be used. Should deterrence fail, it is imperative that the United States be able to defeat aggression of any kind. Especially important is the ability to deter or defeat nearly simultaneous large-

scale, cross-border aggression in two distant theaters in overlapping time frames, preferably in concert with allies. The ability to rapidly defeat initial enemy advances short of their objectives in two theaters in close succession reassures our allies and ensures the protection of our worldwide interests. We must also be prepared to conduct several smaller-scale contingency operations at the same time, as situations may dictate the employment of US military capabilities when rapid action is required to stabilize a situation.

Preparing Now for an Uncertain Future. As we move into the next century, it is imperative that the United States maintain the military superiority essential to our global leadership. Our strategy calls for transformation of our doctrine and organizations and a stabilized investment program in robust modernization that exploits the Revolutions in Military Affairs (RMA) and Business Affairs (RBA).

As we move into the next century, it is imperative that the United States maintain the military superiority essential to our global leadership.

Strategic Concepts

The National Military Strategy describes four strategic concepts that govern the use of our forces to meet the demands of the strategic environment. **Strategic Agility** is the timely concentration, employment and sustainment of US military power anywhere, at our own initiative, and at a speed and tempo that our adversaries cannot match. It is an important hedge against the uncertainty we face. It allows us to conduct multiple missions, across the full range of military operations, in geographically separated regions of the world.



Overseas Presence is the visible posture of US forces and infrastructure strategically positioned forward, in and near key regions. Forces present overseas promote stability, help prevent conflict, and ensure the protection of US interests. Our overseas presence demonstrates our determination to defend US, allied, and friendly interests while ensuring our ability to rapidly concentrate combat power in the event of crisis. **Power Projection** is the ability to rapidly and effectively deploy and sustain US military power in and from multiple, dispersed locations until conflict resolution. Power projection provides the flexibility to respond swiftly to crises, with force packages that can be adapted rapidly to the environment in which they must operate, and if necessary, fight their way into a denied theater. **Decisive Force** is the commitment of sufficient military power to overwhelm an adversary, establish new military conditions, and achieve a political resolution favorable to US national interests. Together, these four strategic concepts emphasize that America's military must be able to

employ the right mix of forces and capabilities to provide the decisive advantage in any operation.

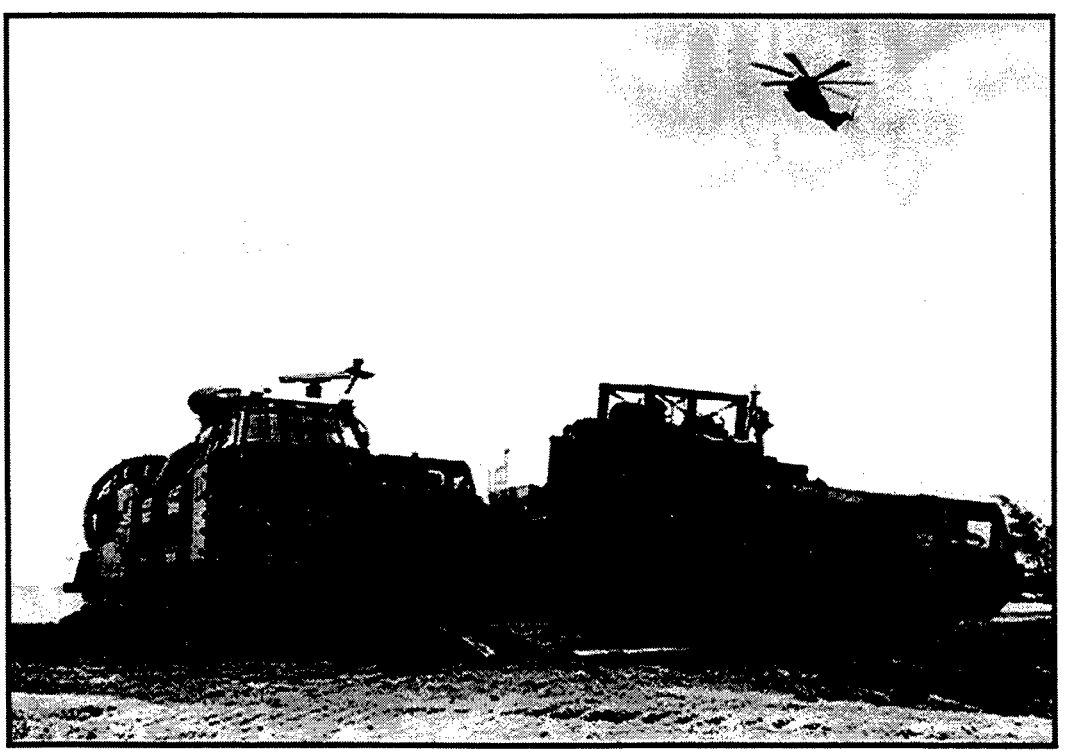
The Joint Force

Our Armed Forces are the preeminent military force in the world, persuasive in peace and decisive in war. To successfully implement our strategy of shaping, responding, and preparing, the forces and capabilities recommended in the QDR report are essential. Equally critical to the success of our strategy are the men and women who comprise our military forces. We must continue to recruit, train, and maintain a high quality force to ensure our nation's security. Our forces must maintain the high state of readiness that is essential to global leadership; thus the means by which we achieve, maintain, and evaluate our readiness demand continued emphasis. Our military must be ready to fight as a coherent joint force -- fully interoperable and seamlessly integrated. Capitalizing on technology will also be central to maintaining military superiority. Our modernization effort will focus on those technologies that improve the combat effectiveness of our Armed Forces while enhancing the interoperability and integration of the Total Force. Modernization is not an end in itself, but a means to improve the capabilities of our warfighters across the full range of military operations -- from peacetime engagement activities to war.

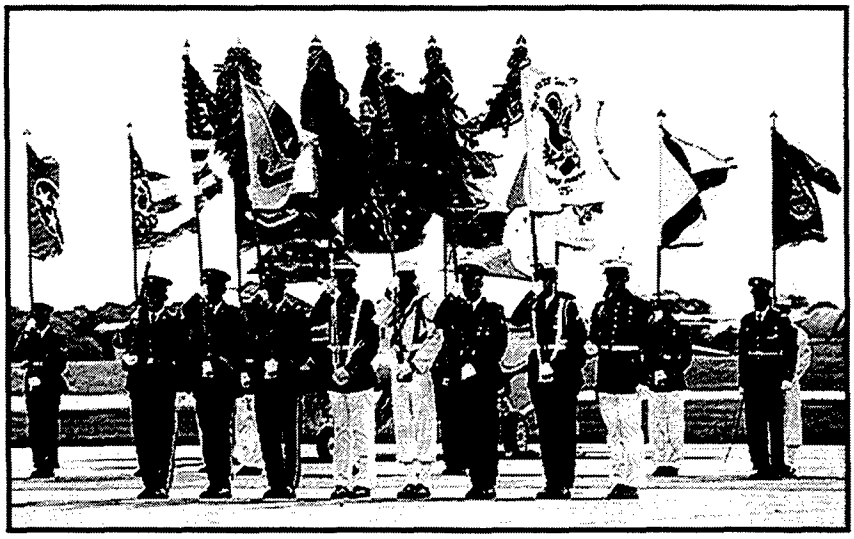
Our Armed Forces are the preeminent military force in the world, persuasive in peace and decisive in war.

Conclusion

The National Military Strategy of **Shaping, Responding,** and **Preparing Now** addresses the challenges and opportunities that confront us now as well as those that await us as we approach the next century. Working with our allies, partners, and friends, we will promote peace in an increasingly complex and potentially more dangerous world. This strategy will ensure that the US military will remain capable of performing whatever tasks we are called upon to perform around the world in the years ahead.



Introduction



The National Military Strategy (NMS) provides advice from the Chairman of the Joint Chiefs of Staff (CJCS), in consultation with the Joint Chiefs of Staff (JCS) and the Combatant Commanders, to the National Command Authorities (NCA) on the strategic direction of the Armed Forces. Based on *A National Security Strategy for a New Century*, approved by the President in May 1997, and the report of the Secretary of Defense to Congress of the 1997 QDR, the NMS describes the strategic environment, develops national military objectives and the strategy to accomplish those objectives, and describes the military capabilities required to execute the strategy. As an unclassified document, it makes this advice accessible to the widest range of government officials, interested citizens, and foreign leaders.

Purpose of the Armed Forces

The President's *1997 National Security Strategy* advances the Nation's fundamental and enduring security needs: protection of the lives and safety of Americans; maintenance of the sovereignty of the United States, with its values, institutions and territory intact; and provision for the prosperity of the Nation and its people. It further establishes as a core objective "to enhance our security with effective diplomacy and with military forces that are ready to fight and win."

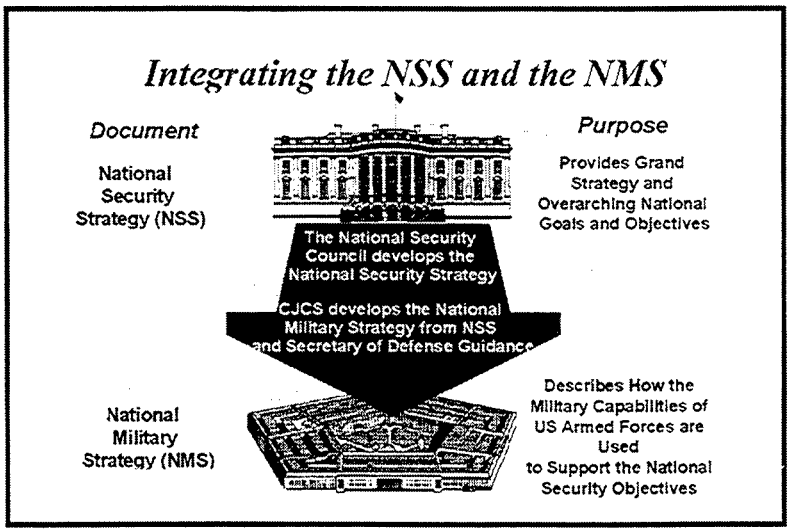
The Armed Forces are the Nation's military instrument for ensuring our security. Accordingly, the primary purpose of US Armed Forces is to deter threats of organized violence against the United States and its interests, and to defeat such threats should deterrence fail. The military is a complementary element of national power that stands with the other instruments wielded by our government. The Armed Forces' core competence is the ability to apply decisive military power to deter or defeat aggression and achieve our national security objectives.

Fighting and Winning Our Nation's Wars

Our Armed Forces' foremost task is to fight and win our Nation's wars. Consequently, America's Armed Forces are organized, trained, equipped, maintained, and deployed primarily to ensure that our Nation is able to defeat aggression against our country and to protect our national interests.

Protecting US National Interests

US national interests fall into three categories. First in priority are our *vital interests* -- those of broad, overriding importance to the survival, security, and



territorial integrity of the United States. At the direction of the NCA, the Armed Forces are prepared to use decisive and overwhelming force, unilaterally if necessary, to defend America's vital interests. Second are *important interests* – those that do not affect our national survival but do affect our national well-being and the character of the world in which we live. The use of our Armed Forces may be appropriate to protect those interests. Third, armed forces can assist with the pursuit of *humanitarian interests* when conditions exist that compel our nation to act because our values demand US involvement. In all cases, the commitment of US forces must be based on the importance of the US interests involved, the potential risks to American troops, and the appropriateness of the military mission.

Throughout our history, America's Armed Forces have responded to a variety of national needs other than waging wars. The security environment we face includes threats to our country and to our interests that are not "war" in the classical sense, and yet may call for military forces. Terrorism, weapons of mass destruction (WMD), illegal drug-trafficking, and other threats at home or abroad may exceed the capacity of other agencies and require the use of military forces, depending upon applicable law, the direction of the NCA, and the national interest involved. In addition, military resources will continue to support civil authorities in executing missions such as civil works, disaster relief, and domestic crises.

The Imperative of Engagement

The President's *National Security Strategy for a New Century* stresses "the imperative of engagement" and enhancing our security through integrated approaches that allow the Nation to **Shape** the international environment; **Respond** to the full spectrum of crises; and **Prepare Now** for an uncertain future. Our strategic approach uses all appropriate instruments of national power to influence the actions of other states and nonstate actors, exert global leadership, and remain the preferred security partner for the community of states that share our interests. The Armed Forces play a key role in this effort. The United States' unparalleled military capabilities form the foundation of mutually beneficial alliances and security partnerships, undergird stability in key regions, and buttress the current worldwide climate of confidence that encourages peace, economic growth, and democratization. Our global engagement makes the world safer for our Nation, our citizens, our interests, and our values.

Our global engagement makes the world safer for our Nation, our citizens, our interests, and our values.

Peacetime military engagement encompasses all military activities involving other nations intended to shape the security environment in peacetime.

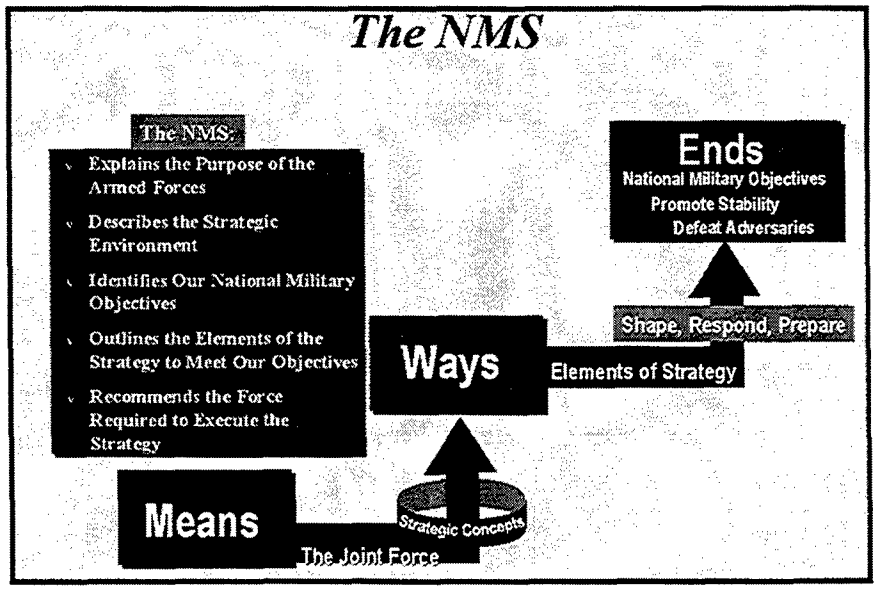
A Posture of Global Engagement

Because America is engaged worldwide, even in peacetime, significant portions of our Armed Forces are present overseas or readily available to deploy overseas, where many of our interests are found. This posture of global engagement and the activities of our forces deployed around the world help shape the international environment by promoting stability and the peaceful resolution of problems, deterring aggression, and helping to prevent conflict. They also preserve our access to important infrastructure, position our military to respond rapidly to emerging crises, and serve as the basis for concerted action with others.

Peacetime Military Engagement

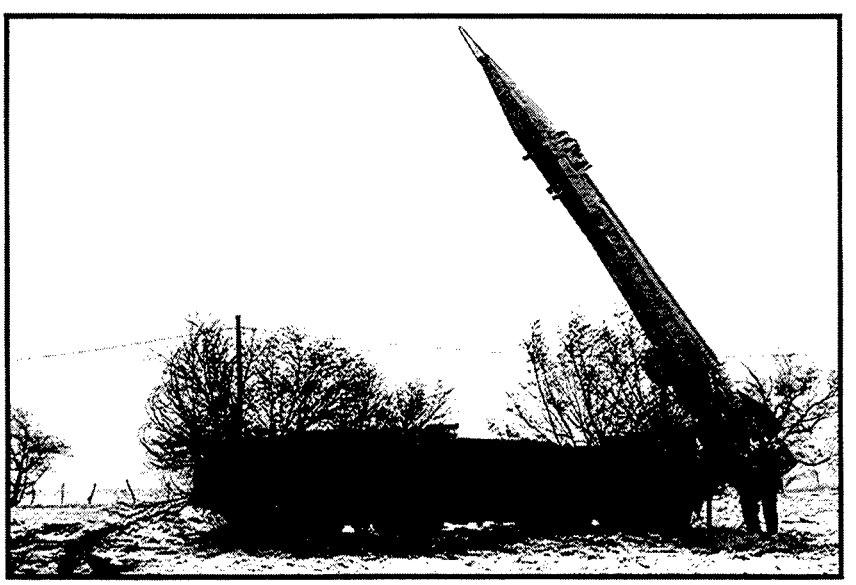
Peacetime military engagement encompasses all military activities involving other nations intended to shape the security environment in peacetime. Engagement is a strategic function of all our Armed Forces, but it is a particularly important task of our forces overseas -- those forward stationed and those rotationally or temporarily deployed. Engagement serves to demonstrate our commitment; improve interoperability; reassure allies, friends and coalition partners; promote transparency; convey democratic ideals; deter aggression; and help relieve sources of instability before they can become military crises.

The text that follows describes our strategic ends, ways, and means. After summarizing the near-term strategic environment from a military perspective, it then describes the "ends:" the national military objectives that support the President's national security strategy and the Secretary's QDR defense strategy. Next, it outlines the "ways" by which the military pursues these objectives according to the integrated approaches of Shaping, Responding, and Preparing Now, and the supporting military strategic concepts. Finally, the NMS describes the necessary "means:" the joint forces required to carry out the strategy.



The Strategic Environment — Opportunities and Challenges

Although the United States currently enjoys relative peace and security, the strategic environment remains complex and potentially dangerous. The threat of global war has receded. Former adversaries now cooperate with us across a range of security issues, and many countries view the United States as the security partner of choice. Our core values of representative democracy and market economics are embraced in many parts of the world, creating new possibilities for enduring peace, prosperity, and cooperation among nations. We are not confronted by a "peer competitor" -- a hostile power of similar strength and capability -- nor are we likely to be in the near future. Given the United States' military potential and ability to deploy to any region of conflict, it is also unlikely that any regional power or coalition could amass sufficient conventional strength to defeat our Armed Forces. We therefore have an unprecedented opportunity to shape the future security environment. We are successfully adapting our military alliances to new realities and building security relationships with new coalition partners. There are, nonetheless, significant challenges. Ethnic, economic, social, and environmental strains continue to cause instability and the potential for violence. Regional conflict remains possible, proliferation of weapons of mass destruction is a major concern, and we face a number of nontraditional, transnational, and unpredictable threats to our security.



Regional Dangers

The potential for conflict among states and groups of states remains our most serious security challenge. Despite the best efforts of engagement, it is likely that more than one aspiring regional power will have both the desire and means to challenge the United States militarily. Iran, Iraq, and North Korea currently pose this challenge, with no guarantee that these threats will diminish significantly soon. Numerous other regional powers have increasing access to wealth, technology, and information, potentially giving them greater military capability and more influence. Some may attempt to become dominant in a region, intimidating US allies and friends, pursuing interests hostile to our own, and developing asymmetric capabilities, including nuclear, biological, and chemical weapons of mass destruction (WMD) and the means to deliver them. With instant global commu-

nications, geographically-separated aggressors could easily coordinate hostile actions. Failed and failing states, and conflict that is not directed against the United States, can also threaten our interests and the safety of our citizens.

Asymmetric Challenges

Some state or nonstate actors may resort to asymmetric means to counter the US military. Such means include unconventional or inexpensive approaches that circumvent our strengths, exploit our vulnerabilities, or confront us in ways we cannot match in kind. Of special concern are terrorism, the use or threatened use of WMD, and information warfare. These three risks in particular have the potential to threaten the US homeland and population directly and to deny us access to critical overseas infrastructure. Other challenges include exploiting commercial and foreign space capabilities, threatening our space-based systems, interrupting the flow of critical information, denying our access to strategic resources, and environmental sabotage. Hostile actors may use such means by themselves or in conjunction with conventional military force. Such asymmetric challenges are legitimate military concerns. We must increase our capabilities to counter these threats and adapt our military doctrine, training, and equipment to ensure a rapid and effective joint and interagency response.

Some state or nonstate actors may resort to asymmetric means . . . unconventional or inexpensive approaches that circumvent our strengths, exploit our vulnerabilities, or confront us in ways we cannot match in kind.



Transnational Dangers

The security environment is further complicated by challenges that transcend national borders and threaten our national interests. Human emergencies other than armed conflict; extremism, ethnic disputes, and religious rivalries; international organized crime, including illegal trade in weapons, strategic materials or illicit drugs, as well as piracy; massive refugee flows; and threats to the environment each have the potential to put US interests at risk. These challenges can obstruct economic growth and democratic development and lead to conflict. Complicating the situation is the continued blurring of the distinction between terrorist groups, factions in ethnic conflicts, insurgent movements, international criminals, and drug cartels. Failure to deal with such security concerns early in their development may require a more substantial response to a more dangerous problem later.

"Wild Cards"

We can never know with certainty where or when the next conflict will occur, who our next adversary will be, how an enemy will fight, who will join us in a coalition, or precisely what demands will be placed on US forces. A number of "wild card" threats could emerge to put US interests at risk. Such threats range from the emergence of new technologies that neutralize some of our military capabilities, to the loss of key allies or alliances and the unexpected overthrow of friendly regimes by hostile parties. While an individual "wild card" may appear unlikely, the number of possible "wild cards" make it more likely that at least one of them will occur with disproportionately high consequences. While asymmetric challenges and transnational dangers are serious in themselves, a particularly grave "wild card" is the combination of several such threats. Acting in collusion with other hostile entities, for example, an adversary might attempt to combine multiple asymmetric means with the seizure of a strategic objective before we could respond. Such an attack — timed to avoid US forces while they are committed elsewhere, and supported by diplomatic and propaganda efforts — could be directed against an important national interest. This could critically undermine US will, credibility, access, and influence in the world.



The strategic environment facing us is complex, dynamic, and uncertain . . . It is in this environment that the United States Armed Forces must carry out their tasks to protect America and its interests.

The strategic environment facing us is complex, dynamic, and uncertain. If the United States were to withdraw from international commitments, forsake its leadership responsibilities, or relinquish military superiority, the world would become more dangerous and the threats to US interests would increase. It is in this environment that US Armed Forces must carry out their tasks to protect America and its interests.

The Strategy — Shape, Respond, Prepare Now

Our National Military Strategy depends first and foremost upon the United States remaining secure from external threats. A secure homeland is fundamental to US global leadership; however, it is not the only prerequisite. To protect and promote US national interests, our national military objectives are to **Promote Peace and Stability** and, when necessary, to **Defeat Adversaries** that threaten the United States, our interests, or our allies. US Armed Forces advance national security by applying military power to **Shape** the international environment and **Respond** to the full spectrum of crises, while we **Prepare Now** for an uncertain future.

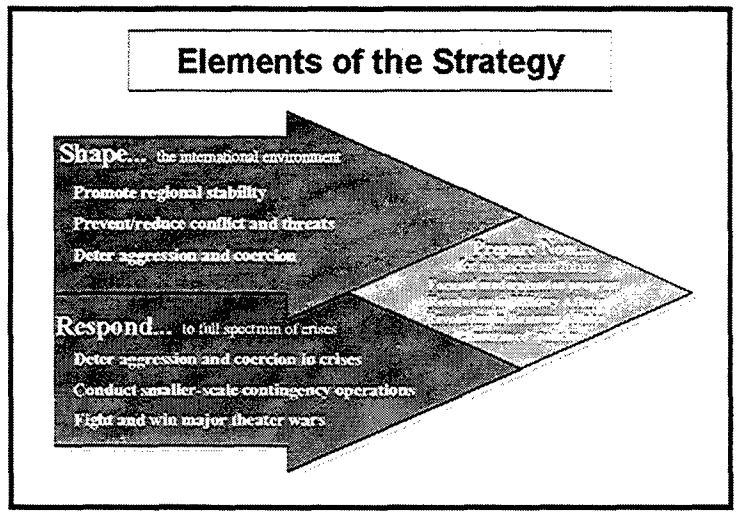


National Military Objectives

Promote Peace and Stability. Promoting peace and stability means creating and sustaining security conditions globally, and in key regions, that allow the peaceful pursuit of our interests and the just resolution of international problems through political means. This does not imply a resistance to change; rather, it underscores a desire for peaceful change. Pursuit of this objective supports the President's *1997 National Security Strategy* by ensuring that no critical region is dominated by a power hostile to the United States and that regions of greatest importance to the US are stable and at peace. Such stability reduces the likelihood of widespread conflict and allows the pursuit of our interests by other instruments of national power. Where a potential regional hegemon threatens our interests and those of our allies through the buildup or use of armed forces, US military power may be concentrated to assure allies and friends, redress the imbalance, and deter or defeat aggression. Where the risk to peaceful political intercourse stems from other sources, US forces may conduct operations or otherwise contribute to efforts that seek to prevent conflict and reduce threats. Our role as a global leader is underscored by US forces performing tasks that encourage other nations to resolve problems through negotiation and compromise rather than by aggression and intimidation.

Defeat Adversaries. In the event of armed conflict, US Armed Forces will render an adversary incapable

of armed resistance through destruction of his capacity to threaten our interests or by breaking his will to do so. This sets the military conditions for winning the peace. In conducting combat operations, the United States will use all means available, commensurate with the national interest at stake, the risks involved, and international law. We will endeavor to commit decisive force to ensure that we achieve the objectives established by the NCA and conclude hostilities in the shortest time possible and on terms favorable to the United States.



Elements of the Strategy: Shape, Respond, Prepare Now

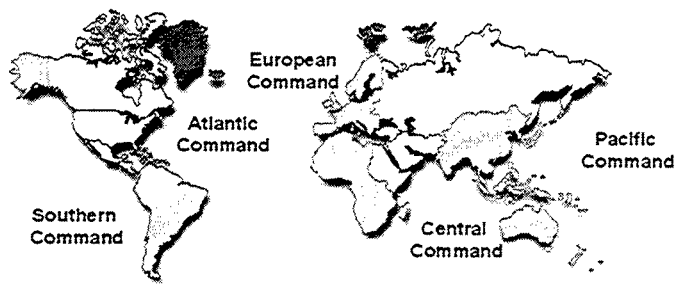
US Armed Forces help shape the international environment primarily through their inherent deterrent qualities and through peacetime military engagement.

US Armed Forces pursue these national military objectives in support of the President's integrated approaches of shaping, responding, and preparing now, which synchronize all elements of national power to achieve our security objectives. Our use of military force should be guided by several considerations. First, military force should be used judiciously and decisively. Military missions must be clearly stated, with achievable military objectives that support national political aims. Second, on most occasions, our forces will operate as a joint team, harmonizing the unique and complementary strengths and capabilities of each of our Services. Third, while retaining unilateral capability, whenever possible we must seek to operate alongside alliance or coalition forces, integrating their capabilities and capitalizing on their strengths. Finally, we must ensure that the conditions necessary for terminating military involvement and withdrawing military forces are clearly established.

Shaping the International Environment. US Armed Forces help shape the international environment primarily through their inherent deterrent qualities and through peacetime military engagement. The shaping element of our strategy helps foster the institutions and international relationships that constitute a peaceful strategic environment by promoting stability; preventing and reducing conflict and threats; and deterring aggression and coercion.

Promoting Stability. Through peacetime engagement activities, US Armed Forces promote regional stability, increase the security of allies and friends, build coalitions, and ensure a more secure global environment. The commanders-in-chief of our unified commands, based on guidance

On any given day, the Total Force...



is deployed in support of 10 Joint/Combined Operations and participates in 11 exercises in over 70 countries.

from the NCA and CJCS, develop plans and employ forces and personnel in peacetime to protect and promote US interests and regional security objectives.

Our international exercise program is one such activity. Exercises enhance interoperability and readiness and demonstrate our ability to form and lead effective coalitions. They demonstrate our capabilities and resolve to friends and potential adversaries alike. They provide realistic conditions for working with the technologies, systems, and operational procedures that will be crucial in times of crisis. International exercises also provide geographic familiarity and foster an understanding of cultures, values, and habits of other societies. Exercises encourage burden sharing on the part of friends and allies, and facilitate regional integration.

Through other engagement activities, such as information sharing and a wide range of contacts between our military and the defense establishments of other nations, we promote trust and confidence and increase the security of our allies, partners, and friends. Partnership for Peace, defense cooperation activities, foreign military sales, the International Military Education and Training (IMET) program, and other programs establish long-term professional relationships between our Armed Forces and the future military leadership of other countries. Military-to-military contacts with countries that are neither staunch friends nor confirmed foes build constructive security relationships, help to promote the appropriate role of armed forces in a democratic society, and enhance stability.

Through . . . engagement activities such as . . . contacts between our military and the defense establishments of other nations, we promote trust and confidence and increase the security of our allies, partners, and friends.

<u>Preventing or Reducing Conflicts and Threats.</u>

Conflict prevention means the reduction, mitigation, or neutralization of the causes of conflict. Though the military by itself can rarely address the root causes of conflict -- as it often stems from political, economic, social, and legal conditions that are beyond the core competence of the military to resolve -- military forces can provide a degree of fundamental security and use their unique operational and logistical capabilities to help civil initiatives succeed. Such military operations can have

Deterrence rests . . . on our demonstrated ability and willingness to defeat potential adversaries . . . Our deterrence capability gives allies and friends the confidence necessary for normal political discourse and peaceful resolution of differences.

important strategic value when they promote the overall stability the US seeks, thus reducing the need for greater military effort later.

The US effort to prevent conflict and reduce threats includes arms control measures as an essential part. Verifiable arms control agreements, as well as confidence building and transparency measures, help reduce tensions and dangers. Military resources are an important component of this effort, particularly in the conduct of reciprocal inspection, verification, and, in some cases, enforcement activities. Bringing worldwide arsenals into conformity with international nonproliferation standards, helps to reduce uncertainty about potential threats, and allows countries to direct resources to safer, more productive relations. The United States remains committed to our obligations under bilateral and international arms control agreements. Expanding arms control efforts to address the use or possession of WMD, the development of WMD technology, and the control and transfer of fissionable materiel are also extremely important to enhancing US security.

Peacetime Deterrence. Deterrence means preventing potential adversaries from taking aggressive actions that threaten our interests, allies, partners, or friends. It is the military's most important contribution to the shaping element of the President's strategy. Deterrence rests in large part on our demonstrated ability and willingness to defeat potential adversaries and deny them their strategic objectives. Our deterrence capability gives allies and friends the confidence necessary for normal political discourse and peaceful resolution of differences. The critical elements of deterrence are our conventional warfighting capabilities: forces and equipment strategically positioned, our capability to rapidly project and concentrate military power worldwide; our ability to form and lead effective military coalitions; and our capacity to protect our homeland, forces, and critical infrastructure from the full range of potential threats. Our strategic nuclear forces complement our conventional capabilities by deterring any hostile foreign leadership with access to nuclear weapons from acting against our vital interests. Our nuclear forces may also serve to convince such

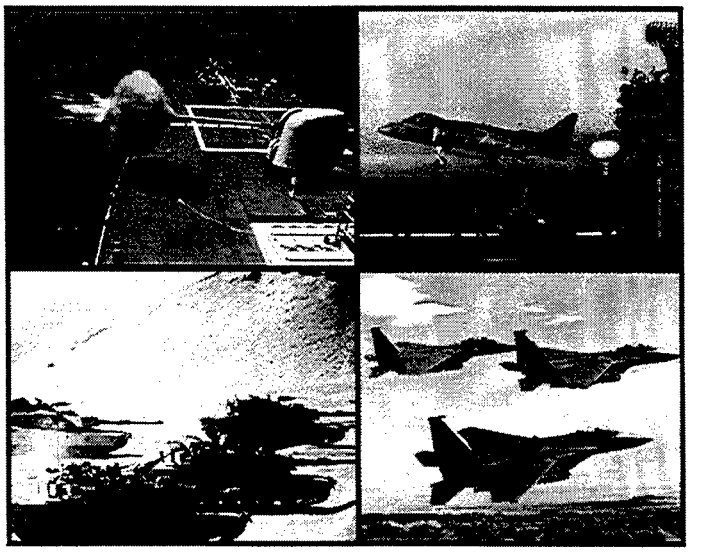


leaders that attempting to seek a nuclear advantage would be futile.

Responding to the Full Spectrum of Crises. Given the strategic environment, the US military undoubtedly will be called upon to respond to crises across the full range of military operations, from humanitarian assistance to fighting and winning MTWs and conducting concurrent smaller-scale contingencies. US forces must be able to respond to crises from a posture of global engagement. In the event of a major theater war the United States will need to be extremely selective in undertaking substantial engagement activities and smaller-scale contingency operations. More than likely, we would have to disengage from activities and operations not deemed vital in order to better posture our forces to deter or defeat aggression in a second major theater war. A credible US force-in-being, despite multiple demands, is a key stabilizing influence in the world. Responding to multiple concurrent contingencies requires careful consideration to ensure our forces are not dissipated and therefore either unable, or perceived as unable, to respond to more critical threats.

A credible US force-in-being, despite multiple demands, is a key stabilizing influence in the world.

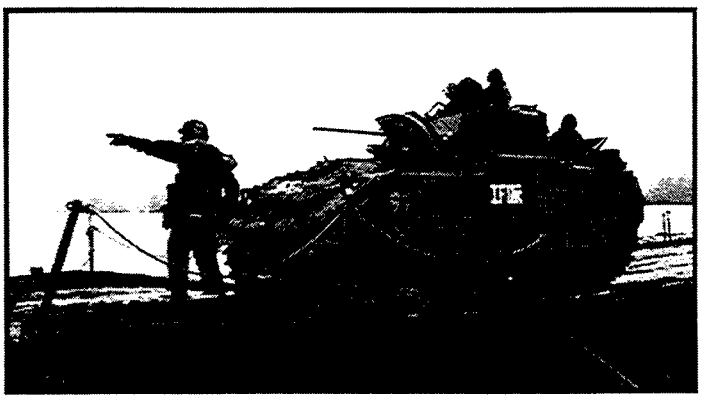
Deterring Aggression or Coercion in Crisis. The first response in any crisis normally consists of steps to deter an adversary so the situation does not require a greater US response. This generally involves signaling our commitment by enhancing our warfighting capability in a theater or by making declaratory statements to communicate US intentions and the potential cost of aggression to an adversary. We may also choose to emphasize our resolve by responding in a limited manner, for example, by enforcing sanctions or conducting limited strikes. The deterrent posture and activities



of our armed forces ensure we remain prepared for conflict should deterrence fail.

Fighting and Winning Major Theater Wars. As a global power with worldwide interests, it is imperative that the United States be able to deter and defeat nearly simultaneous, large-scale, cross-border aggression in two distant theaters in overlapping time frames, preferably in concert with regional allies. For the time being, we face this challenge in the Arabian Gulf region and in Northeast Asia. However, even should these challenges diminish, this capability is critical to maintaining our global leadership role. Lack of such a capability would signal to key allies our inability to help defend mutual interests, thus weakening our alliances and coalitions. Because

such weakness would not escape the attention of potential adversaries, it might make two simultaneous crises more likely. US commitment



to one crisis would present the opportunity, otherwise unrealized, for another aggressor to act. Even more dangerous, it could inhibit the United States from responding to a crisis promptly enough, or even at all, for fear of committing our only forces and thereby making ourselves vulnerable in other regions of the world. The capability to fight two major theater wars initiated in rapid succession is of critical importance as it helps deter opportunism, promote stability, and provide the depth and flexibility to deal with unanticipated challenges.

In this regard, a particularly challenging requirement associated with fighting and winning major theater wars is being able to rapidly defeat initial enemy advances short of their objectives in two theaters in close succession, one followed almost immediately by another. Maintaining this capability is absolutely critical to our ability to seize the initiative in both theaters and to minimize the amount of territory we and our allies must regain from aggressors. Failure to halt an enemy invasion rapidly would make the subsequent campaign to evict enemy forces from captured territory much more difficult, lengthy, and costly. Such failure would also weaken coalition support, undermine US credibility, and increase the risk of conflict elsewhere.

Conducting Multiple, Concurrent Smaller-Scale Contingency Operations. Future challenges to our interests will likely require use of our forces in a wide range of concurrent operations short of major theater war. Swift action by military forces may sometimes be the best way to prevent, contain, or resolve conflict, thereby precluding greater effort and increased risk later. Using some of our unsurpassed capabilities in the pursuit of common interests and values demonstrates leadership and encourages confidence and greater contributions by others, reducing the demand on ourselves in the long run. US military forces provide a full array of capabilities that can be tailored to give the NCA many options in pursuing our interests. Our capacity to perform shows of force, limited strikes, opposed interventions, no-fly zone and sanctions enforcement operations, interposition or observation operations, and other missions allows us to deter would-be aggressors and control the danger posed by rogue states. US forces can perform peace operations and humanitarian assis-

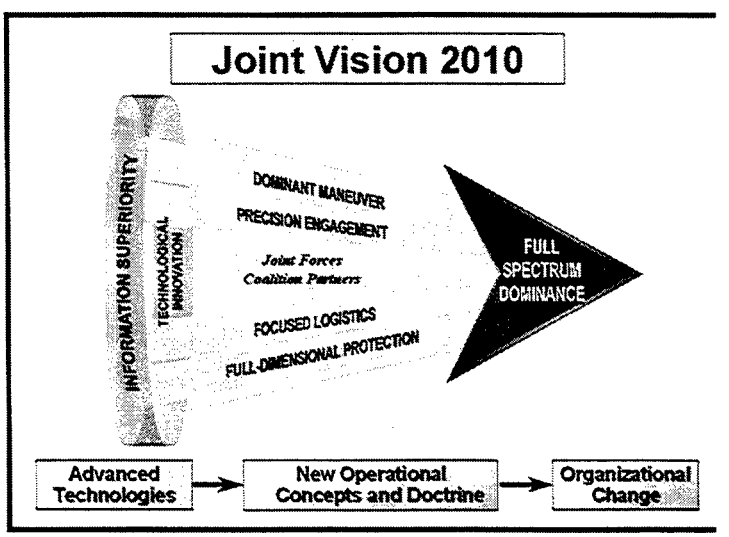
Swift action by military forces may sometimes be the best way to prevent, contain, or resolve conflict, thereby precluding greater effort and increased risk later.

. . . we must transform US combat capabilities and support structures, but while we do so our forces must remain engaged worldwide. . .

tance operations, and can evacuate noncombatants from dangerous situations, whether opposed or unopposed. US forces will act unilaterally and in concert with security partners, using all means authorized by the President and the Congress, to counter international terrorism at home and abroad. Unique military capabilities can also support domestic authorities in combating direct and indirect threats to the US homeland, such as the illegal drug trade, especially when the potential for violence exceeds the capability of domestic agencies.

Preparing Now for an Uncertain Future. As we move into the next century, it is imperative that the United States maintain the military superiority essential to our global leadership. To be able to respond effectively in the future, we must transform US combat capabilities and support structures, but while we do so, our forces must remain engaged worldwide and ready to fight and win two nearly simultaneous major theater wars. Success demands a stabilized investment program in robust modernization that exploits the RMA. It also requires fundamental reengineering of our infrastructure and streamlining of our support structures through the RBA to realize the cost efficiencies necessary to recapitalize the force. Though difficult to accomplish, such tasks are essential to reaching new levels of joint warfighting effectiveness.

Joint Vision 2010 is the conceptual template for joint operations and warfighting in the future. It provides the azimuth for the Services' visions, thus ensuring the future interoperability of the joint force. Because we will often act in concert with like-minded nations, as we implement *JV 2010*, we must also retain interoperability with our allies and potential coalition partners. This vision of future capabilities guides our warfighting requirements and procurement, and focuses technological development. *JV 2010's* key enablers of information

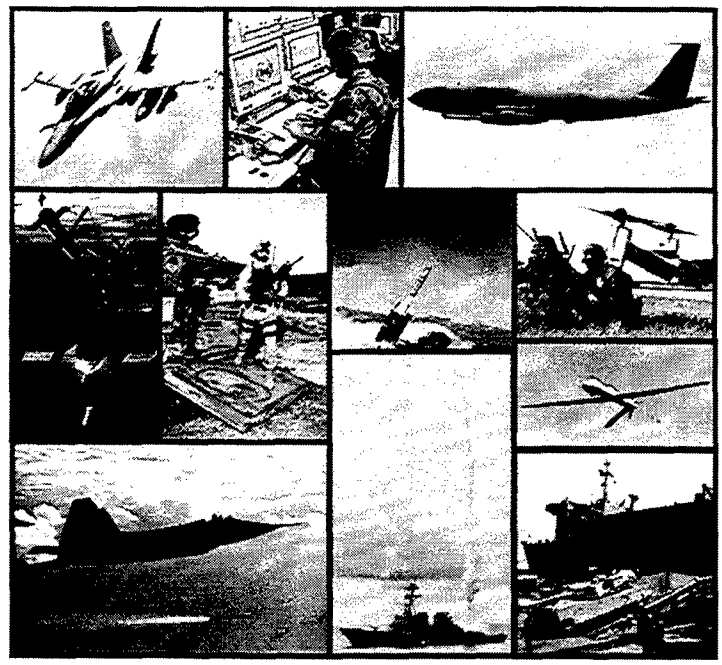


superiority and technological innovation will transform the current concepts of maneuver, strike, protection, and logistics into the new operational concepts of dominant maneuver, precision engagement, focused logistics, and full-dimensional protection. Turning these concepts into reality will help us to conduct decisive operations in any environment, a characteristic *JV 2010* calls "full spectrum dominance." *JV 2010* rests on the foundations of information superiority and technological innovation.

Information Superiority. Information superiority is the capability to collect, process, and disseminate an uninterrupted flow of precise and reliable information, while exploiting or denying an adversary's ability to do the same. While it is dependent upon superior technology, systems integration, organization and doctrine, it is not an inherent quality but, like air superiority, must be achieved in the battlespace through offensive and defensive information operations. Information superiority yields battlespace awareness, an interactive, shared and highly accurate picture of friendly and enemy operations as they occur. Information superiority allows our commanders to employ widely dispersed joint forces in decisive operations, engage and reengage with the appropriate force, protect the force throughout the battlespace, and conduct tailored logistical support.

This transformation of our forces is not a choice between people and technology, but about how to integrate the strengths of both to give the nation the best possible military capability.

Technological Innovation. As we reshape our forces to meet the challenges of a changing world, we will leverage emerging technologies to enhance the capabilities of our servicemen and



women through development of new doctrine, organizations, materiel, and training. Development and acquisition of new systems and equipment will improve our ability to conduct decisive operations and achieve full spectrum dominance. However, they are not a panacea. We must recognize that each includes inherent vulnerabilities; each must be applicable across the range of operations; and each must enhance the human capability of our forces.

Balanced Evolution. The fundamental challenge for our Armed Forces is to shape and respond in the current and near-term security environment, while we concurrently prepare for the future. Because our forces are engaged worldwide every day, their transformation to achieve the new capabilities described in *JV 2010* is necessarily evolutionary. Through a rigorous process of experimentation, assessment, refinement, and doctrinal development, we can meet our responsibility to maintain ready forces today while taking steps to transform those forces to be superior tomorrow. This transformation of our forces is not a choice between people or technology, but about how to integrate the strengths of

both to give the Nation the best possible military capability. It involves much more than the acquisition of new military systems. It means harnessing new technologies to give US forces greater military capabilities through advanced concepts, doctrine, and organizations so that they can dominate any future battlespace.



Strategic Concepts

Strategic concepts are key ideas that govern our use of military force and forces as we execute the strategy of **Shape, Respond, Prepare Now.** These ideas are also important considerations that guide how our forces are trained, equipped, and organized.

Strategic Agility. Strategic agility is the timely concentration, employment, and sustainment of US military power anywhere at our own initiative, at a speed and tempo that our adversaries cannot match. Our forces must be able to seize and maintain the momentum of operations rapidly to meet multiple demands in an uncertain and complex strategic environment. Strategic agility requires our Armed Forces to be versatile, that is, to conduct multiple missions simultaneously, across the full range of military operations, in geographically separated regions of the world. This versatility, and the equally important abilities to orchestrate, command, control, and support dispersed joint forces permit the decisive application of our strengths against enemy weaknesses. Strategic agility is essential if we are to remain globally engaged but not find ourselves improperly positioned or otherwise unable to respond to crises.

Our forces must be able to seize and maintain the momentum of operations rapidly to meet multiple demands in an uncertain and complex strategic environment.

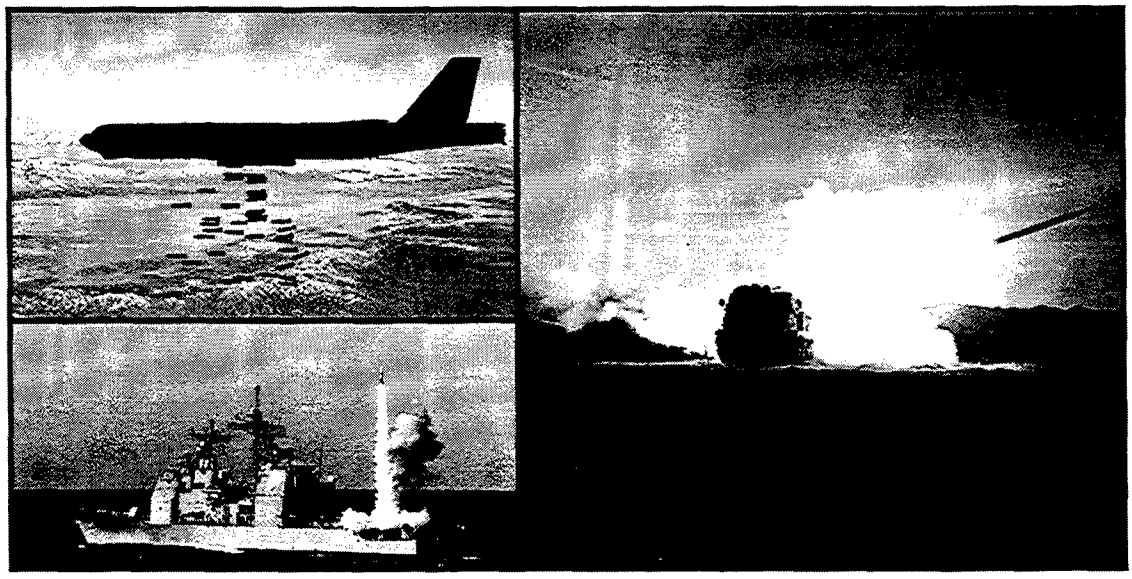
Overseas Presence. Overseas presence is the visible posture of US forces and infrastructure strategically positioned forward, in or near key regions. Permanently stationed and rotationally or temporarily deployed forces promote security and stability, prevent conflict, give substance to our security commitments, and ensure our continued access. Overseas presence enhances coalition operations by promoting joint and combined training and encouraging responsibility sharing on the part of friends and allies. Overseas presence contributes to deterrence by demonstrating our determination to defend US, allied, and friendly

interests in critical regions while enabling the US to rapidly concentrate military power in the event of crisis. The presence of our forces provides commanders with a flexible array of options to respond promptly to aggression. Overseas presence forces embody global military engagement. They serve as role models for militaries in emerging democracies; contribute uniquely to the stability, continuity, and flexibility that protects US interests; and are crucial to continued democratic and economic development.

Power Projection. Power projection is the ability to rapidly and effectively deploy and sustain US forces in and from multiple, dispersed locations. Complementing overseas presence, power projection strives for unconstrained global reach. Power projection assets are tailored to regional requirements and send a clear signal of US commitment. Being able to project power means being able to act even when we have no permanent presence or infrastructure in a region. If necessary, it means fighting our way into a denied theater or creating and protecting forward operating bases. The ability to assemble and move to, through, and between a variety of environments, often while reconfiguring to meet specific mission requirements, is essential to offsetting an adversary's advantages in mass or geographic proximity. Global power projection provides our national leaders with the options they need to respond to potential crises.

Global power projection provides our national leaders with the options they need to respond to potential crises.

Decisive Force. Decisive force is the commitment of sufficient military power to overwhelm all armed resistance in order to establish new military conditions and achieve political objectives. In cases not involving armed resistance, decisive force means that US forces will be wholly sufficient to accomplish the full scope of their military tasks. Decisive force in the early stages of a crisis can be critical to deterring aggression. The concept does not promise quick or bloodless solutions to military challenges, but does require that, where the actual commitment of military power is anticipated, such force will be clearly superior to that of any potential adversary.



The Joint Force

To execute this strategy the United States requires forces of sufficient size, depth, flexibility, and combat power to defend the US homeland; maintain effective overseas presence; conduct a wide range of concurrent engagement activities and smaller-scale contingencies, including peace operations; and conduct decisive campaigns against adversaries in two distant, overlapping major theater wars, all in the face of WMD and other asymmetric threats. This section describes the "full spectrum" forces needed to meet these core requirements, including their three key characteristics: their general size and composition; their overseas posture and readiness; and the capabilities and strategic enablers essential to the execution of this strategy.

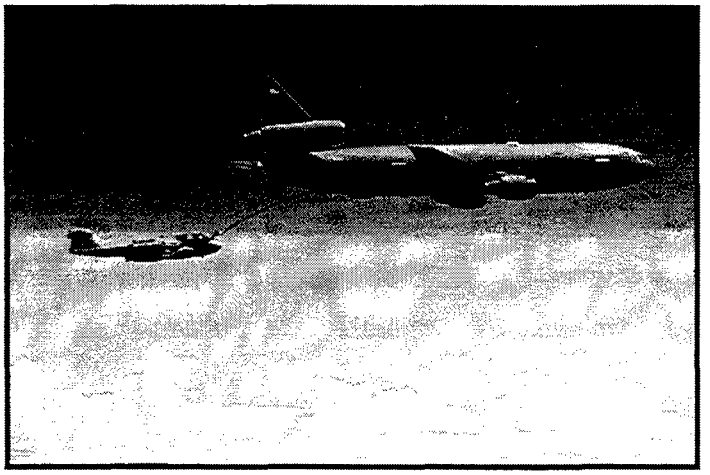


Characteristics of a Full Spectrum Force

US Armed Forces as a whole must be multi-mission capable; interoperable among all elements of US Services and selected foreign militaries; and able to coordinate operations with other agencies of government, and some civil institutions.

Multi-Mission Capable. Our forces must be proficient in their core warfighting competencies and able to transition smoothly from a peacetime posture to swift execution of multiple missions across the full spectrum of operations. They require the correct mix of capabilities between and within the Services, and among conventional, nuclear, and special operations forces. In addition, our armed forces must strike an appropriate balance between the exploitation of advanced technology and the recognition that most military missions remain manpower intensive. The wide range of likely military operations demands that our forces be able to quickly shift from one type of operation to another. They must also retain their ability to operate successfully despite an adversary's use of asymmetric means. The leadership, discipline, organization, and training inherent in maintaining our core warfighting competencies are the foundation of our ability to adapt readily and efficiently to the challenges peculiar to a wide variety of smaller-scale contingencies.

Joint. Each Service, including the US Coast Guard when assigned, brings its own set of capabilities and strengths to a mission. Some situations demand the unique capabilities of only one Service, but most will call for capabilities from all Services. The skillful and selective combination of Service capabilities into Joint Task Forces provides US com-



manders great flexibility in tailoring forces to meet national objectives given specific circumstances. As important, it presents an enemy with an overwhelming array of capabilities against which to defend. A fully joint force requires joint operational concepts, doctrine, tactics, techniques, and procedures — as well as institutional, organizational, intellectual, and system interoperability — so that all US forces and systems operate coherently at the strategic, operational, or tactical levels. Joint effectiveness does not mean that individual pieces of equipment or systems are identical, but rather that commanders are not constrained by technical or doctrinal barriers among the components of the joint force, and that the joint force's capability is dramatically enhanced by the blending of complementary Service capabilities.

Interoperable. All elements of US joint forces must be able to work together smoothly. Success on the battlefield will depend on the operational and tactical synergy of integrated, agile Service forces. Although we must retain the capability to act unilaterally, we prefer to act in concert with our friends and allies. Laying a solid foundation for interoperability with our alliance and potential coalition partners is fundamental to effective combined operations. We remain committed to doctrinal and technological development with our key allies and to combined training events and exercises that contribute to interoperability.

It is imperative that our Joint Forces also enhance their ability to operate in consonance with other US government agencies, and with Non-governmental Organizations (NGOs), International Organizations (IOs), and Private Voluntary Organizations (PVOs) in a variety of settings. The specialized access and knowledge these organizations possess can facilitate prompt, efficient action to prevent conflict, resolve a crisis, mitigate suffering, and restore civil government upon conflict termination. Achieving interagency and civil interoperability through the continuing development of our doctrine and interagency participation in our training exercises is important to the unity of effort upon which success in many missions depends.

Success on the battlefield will depend on the operational and tactical synergy of integrated, agile Service forces.

Today's Force

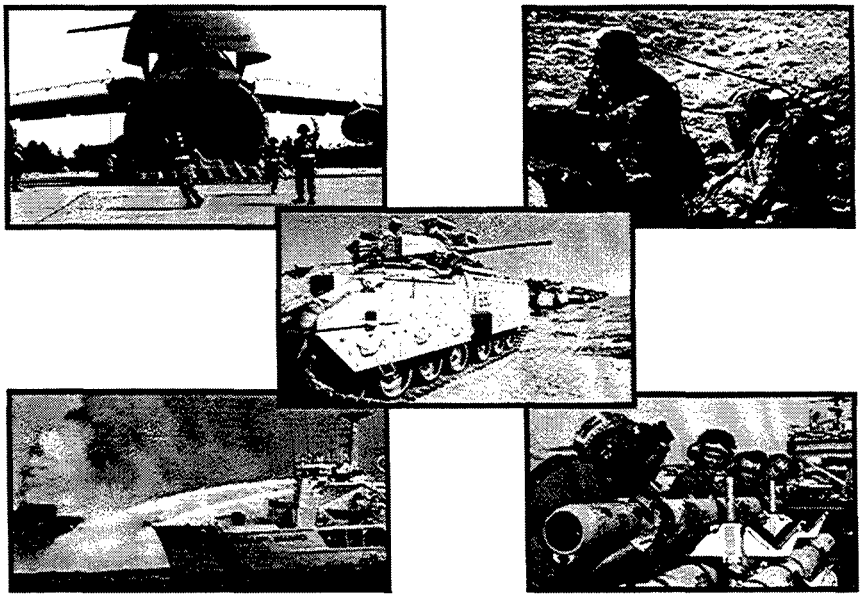
The Total Force. The Total Force requires the unique contributions of its Active and Reserve Components and its civilian employees. All elements of the Total Force must be appropriately organized, modernized, trained, and integrated. As described in the QDR report, the Total Force required to carry out the President's *1997 National Security Strategy* and this supporting military strategy at prudent military risk includes:

All elements of the Total Force must be appropriately organized, modernized, trained and integrated.

Army – Four active corps with ten active divisions (six heavy, two light infantry, one airborne, and one air assault); and two active armored cavalry regiments; fifteen National Guard enhanced separate brigades; the capability provided by appropriately restructured National Guard combat divisions; and other appropriate forces.

Navy – Twelve aircraft carriers, eleven air wings, twelve amphibious ready groups, 116 surface combatant ships, 50 attack submarines, and augmentation forces of the Naval Reserve.

Air Force – A total fleet of 187 bombers, just over 12 active fighter wing equivalents, eight reserve component fighter wing equivalents, and four National Guard dedicated continental air defense squadrons (other forces will be used to handle the US air sovereignty mission) together with the currently programmed tanker and airlift fleets.



Marine Corps – Three active Marine Expeditionary Forces (MEF) each comprised of a command element, a division, an aircraft wing, and a service support group. The active force will continue to be augmented and reinforced by one Reserve division/wing/service support group.

Coast Guard – Approximately 50,000 active and reserve personnel and 43 medium- and high-endurance cutters.

Civilians – Approximately 640,000 men and women whose support is essential to the maintenance of our readiness. From depot workers to senior-level leaders, they work together to perform functions ranging from policy direction to maintenance of our total force.

Special Operations Command – A joint special operations force consisting of approximately 47,000 Army, Navy and Air Force active and reserve personnel.

Reserve Components. The Reserve Components, in addition to being essential participants in the full range of military operations, are an important link between the Armed Forces and the public. Mobilization of the Reserve Components has always been an important indicator of the commitment of national will. Guardsmen and reservists are not only integrated into war plans, but also provide critical skills in carrying out contingency operations, as well as augmenting and supporting active units during peacetime. National Guard and other Reserve Component elements also provide the NCA with a

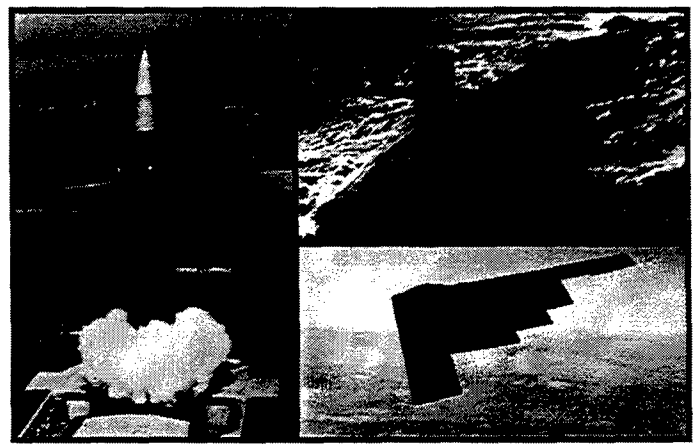
strategic hedge against uncertainty and with an organized basis to expand our Armed Forces if necessary. Additionally, they also provide a rotational base to ease the tempo of unit and individual deployments for the Active Component.

Posture. Most US forces are based in CONUS but are continuously available for deployment. We will maintain roughly 100,000 military personnel in both the European and Pacific regions. Additionally, we will maintain an appropriate presence in the Arabian Gulf region to deter threats to our interests there. These forces signal our commitment to peace and stability in these regions. They affirm our leadership of important alliances and allow us to help shape allied defense capabilities. They underscore our commitment to remain engaged as a stabilizing influence, reinforce our bilateral relations with key partners, alleviate the potential for destabilizing arms races, underwrite deterrence in key regions and strengthen our voice in international forums.

. . . readiness instills in our people the confidence needed to succeed in a wide variety of challenging situations.

Readiness. The readiness of US military forces to meet the full range of missions has never been more important. Ready forces provide the flexibility needed to shape the global environment, deter potential foes and, if required, to rapidly respond to a broad spectrum of crises and threats, including major theater wars. In addition, readiness instills in our people the confidence needed to succeed in a wide variety of challenging situations. Each Service has a different approach to readiness, due to unique force characteristics, contingency plans, response requirements, peacetime forward deployment levels, the availability of training infrastructure and perishable skills. The Services will maintain readiness sufficient to meet the most demanding deployment requirements while seeking sensible management practices that conserve resources and mitigate the potential negative effects of high operational and personnel tempos.

Capabilities. As noted throughout this NMS, the US military must have capabilities that give the national leadership a range of viable options for promoting and protecting US interests in peacetime, crisis, and war. The Joint Force must be able to defeat adversaries in two distant, overlapping major theater wars from a posture of global engagement and in the face of WMD and other asymmetric threats. It must respond across the full spectrum of crises, from major combat to humanitarian assistance operations. It must be ready to conduct and sustain multiple, concurrent smaller-scale contingency operations. In addition to these core require-



. . . our forces must be able to conduct and sustain operations that accomplish US objectives, promote post-conflict stability, and prevent the recurrence of conflict.

ments. US Armed Forces provide the NCA with several equally important capabilities.

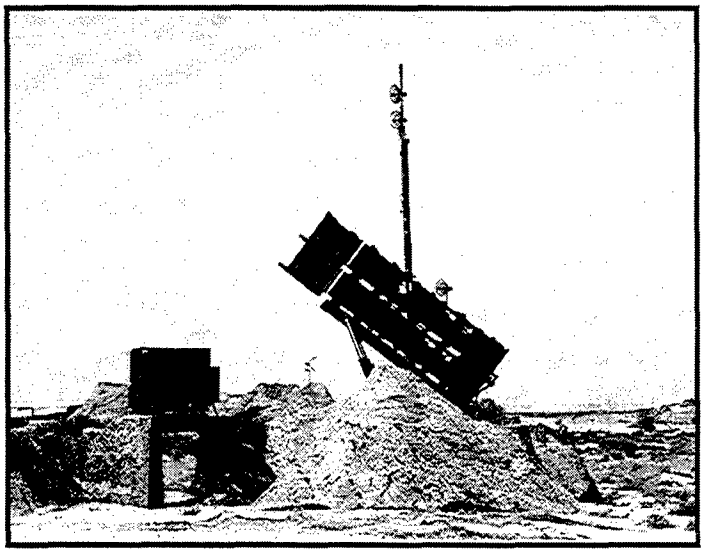
Strategic Deterrence. Credible standing nuclear and conventional forces cause potential adversaries to consider the consequences of pursuing aggression. Although most nuclear powers continue to reduce their arsenals, our triad of strategic forces serves as a vital hedge against an uncertain future, a guarantor of our security commitments to our allies, and a deterrent to those who would contemplate developing or otherwise acquiring their own nuclear weapons. Strategic nuclear weapons remain the keystone of US deterrent strategy. A mix of forward deployable non-strategic nuclear and conventional weapons adds credibility to our commitments. Deterrence is further enhanced by the ability of US forces to attack targets even when access to regional bases may not be feasible or assured. Geography and political constraints on access will not restrict our ability to conduct long range, stand-off attacks against a full range of targets in hostile territory.

Decisive Operations. In situations such as an MTW, the Armed Forces must be able to gain the initiative quickly. Our forces must have the capability to halt an enemy; immediately initiate operations that further reduce his capacity to fight; and mount decisive operations to ensure we defeat him and accomplish our objectives. But wresting military initiative from the enemy is not the end of our commitment. From the onset of a crisis or conflict until termination, our forces must be able to conduct and sustain operations that accomplish US objectives, promote post-conflict stability, and prevent the recurrence of conflict.



Special Operations. The range of challenges to our security demands an ability to influence certain events with forces that are smaller and less visible than conventional formations, offering the NCA options that do not entail a major military commitment. Special Operations Forces provide this capability and offer unique skills, tactics, and systems for the execution of unconventional, potentially high-payoff missions.

Forcible Entry. The United States must be able to introduce military forces into foreign territory in a non-permissive environment. While the United States will pursue the cooperation of other governments to allow US forces access, it must not



assume that such cooperation will always be forthcoming. A forced entry capability ensures that the US will always be able to gain access to seaports, airfields, and other critical facilities that might otherwise be denied. It reassures allies that our ability to come to their aid cannot be denied by an enemy. It also allows future joint force commanders to retain operational freedom of action and gives the United States the ability to go anywhere that US interests require.

Force Protection. Multiple layers of protection for US forces and facilities at all levels, beginning at home, enable US forces to maintain freedom of action from predeployment through employment and redeployment. Fluid battlefields and the potential ability of adversaries to orchestrate asymmetric threats against our forces require that we seek every means to protect our forces. Comprehensive force protection requires the employment of a full array of active and passive measures. The variety of challenges that we will face may also require less than lethal technology to meet demands at the lower end of the range of military operations. Force protection initiatives must thus address all aspects of potential threats, to include terrorism, WMD, information operations, and theater ballistic and cruise missiles.

Countering Weapons of Mass Destruction (WMD). The continued proliferation of WMD, particularly chemical and biological weapons (CBW), has made their employment by an adversary increasingly likely in both major theater war and smaller-scale contingencies. US forces must have a counterproliferation capability balanced among the requirements to prevent the spread of WMD through engagement activities; detect an adversary's possession and intention to use WMD; destroy WMD before they can be used; deter or counter WMD; protect the force from the effects of WMD through training, detection, equipment, and immunization; and restore areas affected by the employment of WMD through containment, neutralization, and decontamination. Since many operations will be conducted as part of an alliance or coalition, we must encourage our friends and allies to train and equip their forces for effective operations in environments where WMD usage is likely.

Fluid battlefields and the potential ability of adversaries to orchestrate asymmetric threats against our forces require that we seek every means to protect our forces.

Focused Logistics. Military operations in today's environment require the ability to tailor logistics packages to meet operational and tactical

requirements in hours or days. US forces must have the ability to link information, logistics, and transportation technologies together to permit continuous operations by leaner and more agile forces in any environment, including those contaminated by the effects of NBC agents. Joint sustainment initiatives such as Joint Total Asset Visibility, the Global Transportation Network, and the Global Combat Support System are deployable, automated supply and maintenance information systems that provide in-transit visibility, eliminate redundant requisitions and reduce delays in the shipment of essential supplies. In-transit visibility, in particular, is key to realizing the benefits of focused logistics. Our efficient use of these systems produces a smaller logistics tail that reduces the burden on transportation systems, requires fewer resources to defend, is more difficult for an enemy to detect and target, and enhances our own mobility.

Information Operations. Success in any operation depends on our ability to quickly and accurately integrate critical information and deny the same to an adversary. We must attain information superiority through the conduct of both offensive and defensive information operations. Information operations are, however, more than discrete offensive and defensive actions; they are also the collection and provision of that information to the warfighters. Superiority in these areas will enable commanders to contend with information threats to their forces, including attacks which may originate from outside their area of operations. It also limits an adversary's freedom of action by disabling his critical information systems. We are developing joint doctrine for offensive and defensive information operations that assigns appropriate responsibilities to all agencies and commands for assuring committed forces gain and maintain information superiority. This emerging joint doctrine must fully integrate interagency participation allowing us to leverage all existing information systems.

Only the most dedicated, well-trained personnel with first class leaders will succeed in the complex and fast-paced environment of future military operations.



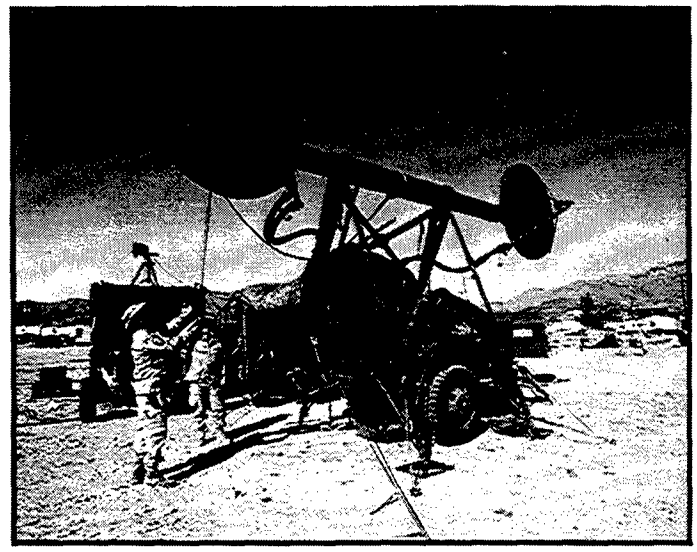
Strategic Enablers. A number of assets -- strategic enablers -- are critical to the worldwide application of US military power and our military strategy.

People. Our nation is committed to an All-Volunteer Force. Its people are the most important enabler of our strategy. The quality of this force is critical. Only the most dedicated, well-trained personnel with first class leaders will succeed in the complex and fast-paced environment of future military oper-

ations. While modern technology enables our forces to perform their missions more effectively, it cannot substitute for high quality people. To recruit and retain people who meet high military standards, the quality of life of our military personnel must be commensurate with the sacrifices we ask them to make. We must provide challenging career options, continual professional development, adequate compensation, medical care, housing, and a stable retirement system. To ensure the viability of the Reserve Components, we must work to safeguard their employment rights and provide employers with incentives for continued support. We must manage the tempo of operations, deployments and personnel transfers to avoid adverse effects on our people and their families. Sustaining core warfighting competencies while adopting new technologies and operational concepts also requires continuous training and education. Finally, the defense of our country and the lives and welfare of our people should be entrusted only to military leaders of honorable character who prove worthy of their profound responsibilities.

...the quality of life of our military personnel must be commensurate with the sacrifices we ask them to make.

Robust All-Source Intelligence. A globally vigilant intelligence system that is able to operate in a complex environment with an increasing number of potential opponents and more sophisticated technology is critical. Our Armed Forces require the timely collection, evaluation, and assessment of a full range of geo-political, socio-economic, and military information throughout the full spectrum of conflict. Our intelligence system must be capable of maintaining its global warning capabilities even while focusing on one or more crises. It must overcome increasingly varied means of deception and protect and secure its information channels. It must respond to the warfighters' needs during compressed decision cycles, and accommodate "smart" and "brilliant" weapons systems that pass targeting information directly to weapons platforms. The technical ability to deliver large quantities of intelligence to all levels without overwhelming commanders and leaders has enormous promise. However, quality intelligence remains equally dependent upon subjective human judgment, from collection and processing to production and dissemination.



Global Command and Control. Robust intelligence and assured information systems are also critical to the command and control of our forces. Global communications must allow for the timely exchange of information, data, decisions, and orders. The ability to gather, process, and disseminate an unin-

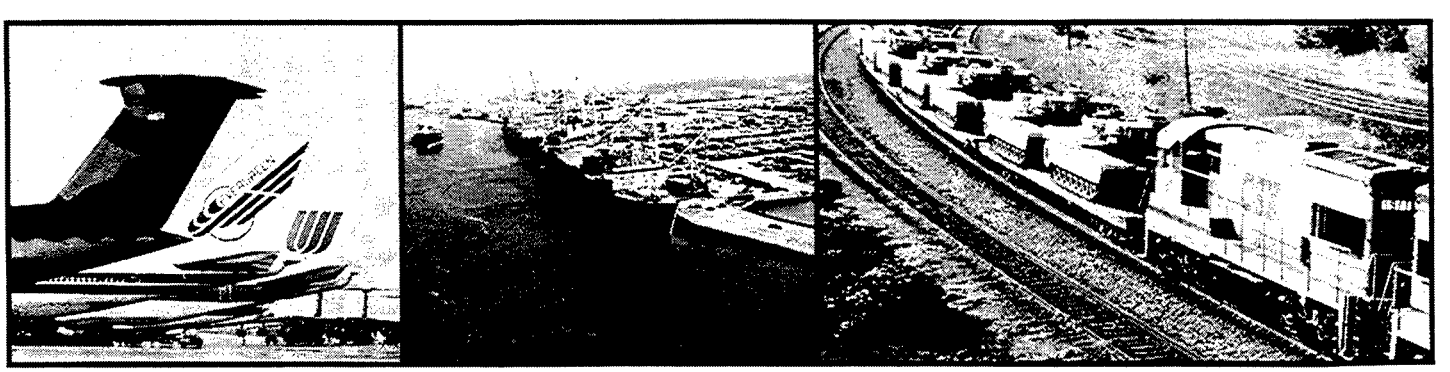
Robust strategic sealift, air mobility, and ground transportation combined with prepositioned supplies and equipment ashore and afloat, are critical . . .

terrupted flow of reliable and precise information under any conditions is a tremendous strategic and military advantage. A secure C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) architecture must be designed and developed from the outset for rapid deployment and with joint and multinational interoperability in mind.

Air and Sea Control. The successful application of military power is dependent on uninhibited access to air and sea. Control of these mediums allows the United States to project power across great distances, conduct military operations, and protect our interests around the world. Our forces will seek to gain superiority in, and dominance of, these mediums to allow our forces freedom to conduct operations and to protect both military and commercial assets.

Space Control. As we will continue to do at sea and in the skies, we will also endeavor to maintain our current technological lead in space as more users develop their commercial and military capabilities. It is becoming increasingly important to guarantee access to and use of space as part of joint operations and to protect US interests. Space control capabilities will ensure freedom of action in space and, if directed, deny such freedom of action to adversaries.

Strategic Mobility. Robust strategic sealift, air mobility, and ground transportation combined with prepositioned supplies and equipment ashore and afloat, are critical to maintaining strategic agility. In addition our forces will normally require access to US and overseas support infrastructure to maintain our ability to project power in times of crises. Enroute infrastructure will assist our forces in rapidly establishing and positioning themselves to dominate any situation. Keeping pace with evolving technology in the transportation industry guarantees our mobility forces continued global reach. Strategic mobility enhancements like increased airlift capability, additional prepositioning of heavy equipment afloat and ashore, increased sealift surge capacity, and additional material handling equipment (MHE) will ensure strategic agility and facilitate our ability to protect our national interests and assist our allies when needed.



Conclusion

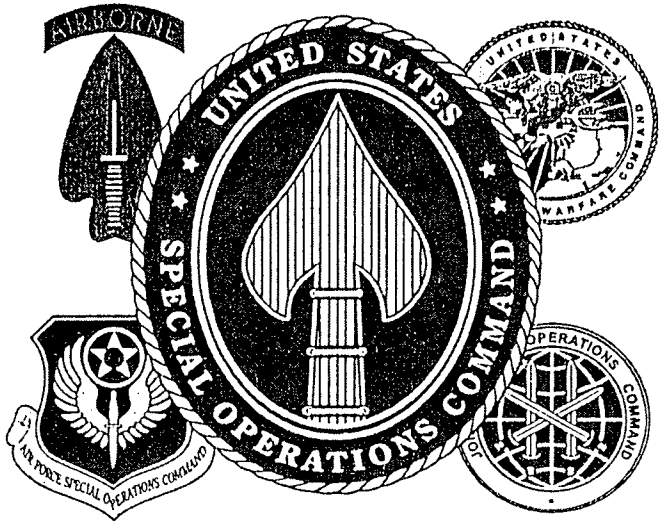
This National Military Strategy, building on the foundation of previous editions, supports the President's *A National Security Strategy for A New Century* and the QDR report. It carries forward the theme that US military power is, and will continue to be, fundamental to ensuring our national security.

The United States will remain the world's only global power for the near-term, but will operate in a strategic environment characterized by rising regional powers, asymmetric challenges including WMD, transnational dangers, and the likelihood of wild cards that cannot be specifically predicted. The dangers we could face can be mitigated by military activities that **Shape** the strategic environment and **Respond** to the full spectrum of crises, while **Preparing** our Armed Forces now for an uncertain future. The force structure described in this document and our overseas presence, combined with our ability to rapidly project combat power anywhere in the world, provides the strategic agility we will require to meet the challenges we are likely to face.

In a time of both uncertainty and promise, this National Military Strategy and our Armed Forces provide our Nation with the means to protect our interests and promote a peace that benefits America and all like-minded nations.

As we pursue the President's strategy for enhancing our security in this new era, the demand for military capabilities and skills is unlikely to diminish, both to deter and defeat aggression in two distant and overlapping MTWs, and in roles other than traditional warfighting. Our Armed Forces' core competence -- the ability to apply decisive military power to deter or defeat acts of aggression -- must remain the primary consideration in determining the structure, training and employment of our military forces.

We cannot know with certainty who our foes will be or where our forces will be needed in the future. In a time of both uncertainty and promise, this National Military Strategy and our Armed Forces provide our Nation with the means to protect our interests and promote a peace that benefits America and all like-minded nations.



GENERAL PETER J. SCHOOMAKER

COMMANDER IN CHIEF

UNITED STATES SPECIAL OPERATIONS COMMAND

CINC-01.PPT

SHAPE, RESPOND, PREPARE NOW

...A MILITARY STRATEGY FOR A NEW ERA

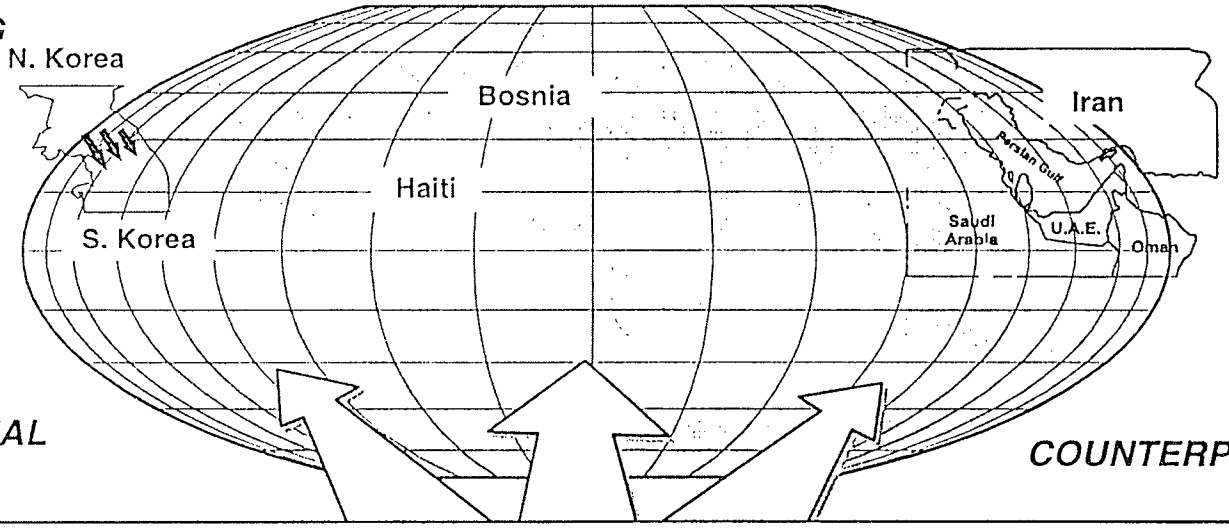
SHAPE THE INTERNATIONAL ENVIRONMENT AND RESPOND TO CRISES
WHILE PREPARING NOW FOR AN UNCERTAIN FUTURE

WAR FIGHTING

REGIONAL INSTABILITY

"WILD CARDS"

TRANSNATIONAL DANGERS



PEACETIME ENGAGEMENT

ASYMMETRIC THREATS

COUNTER TERRORISM

COUNTERPROLIFERATION

SOF PLAYS A KEY ROLE IN EACH

CC97GA19.PPT

SHAPING & RESPONDING
SOF IN FY97

- DEPLOYED TO 144 COUNTRIES & FOREIGN TERRITORIES
- 17 CRISIS RESPONSE OPERATIONS
- 224 JOINT COMBINED EXERCISES FOR TRAINING IN 91 COUNTRIES
- 194 COUNTERDRUG MISSIONS IN 20+ LOCATIONS
- DEMINING MISSIONS IN 11 COUNTRIES



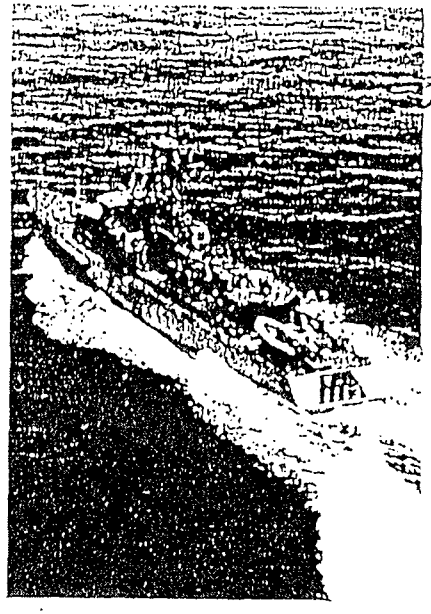
ALL FOR < 1.4% OF DOD BUDGET & PERSONNEL.

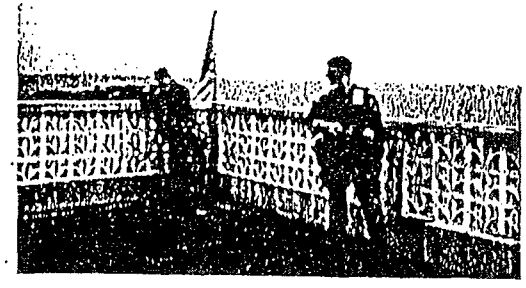
CRISIS RESPONSE
GLOBAL SCOUTS

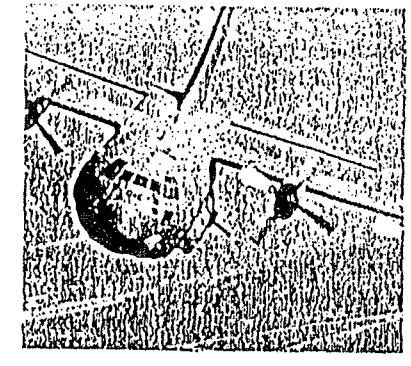
ALBANIA

NORTHERN IRAQ

CAMBODIA







SIERRA LEONE

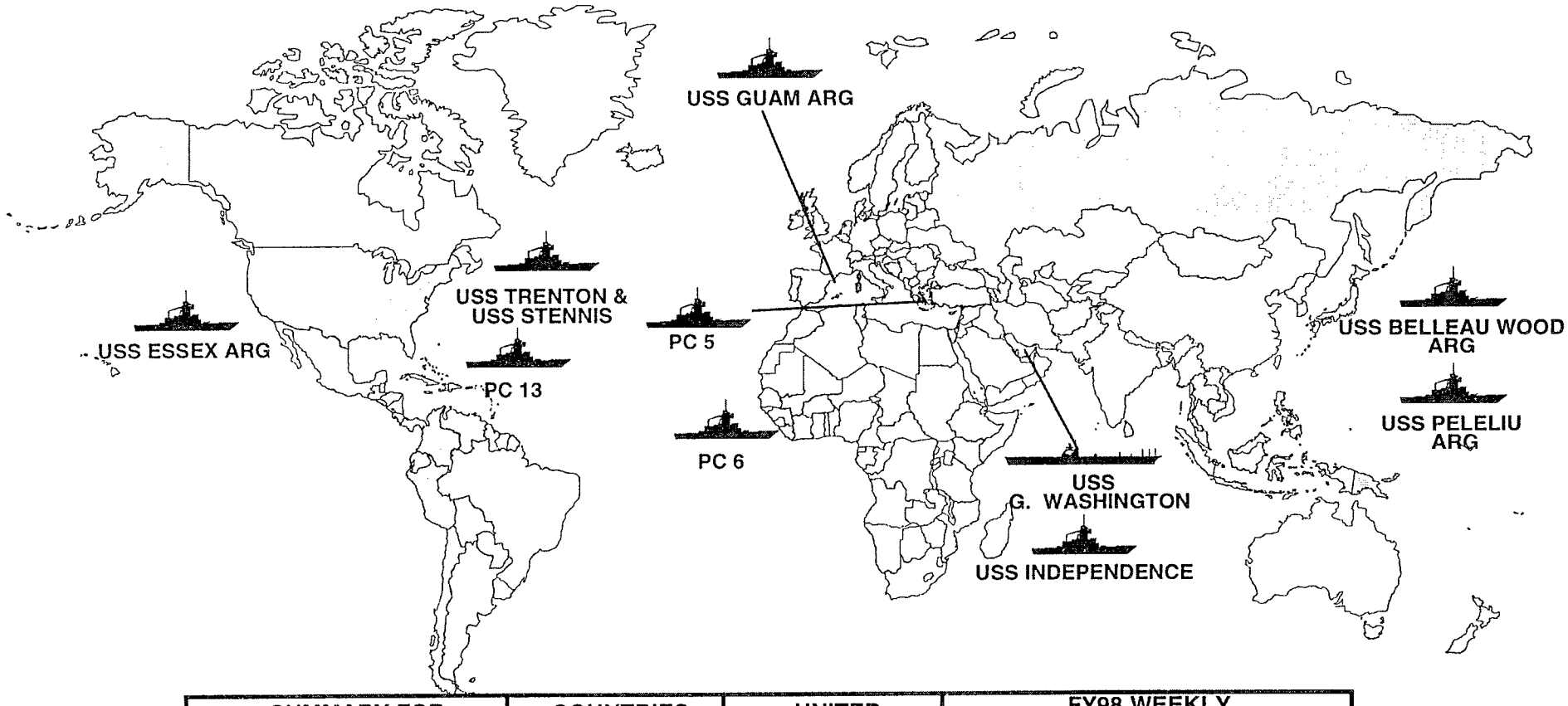
LIBERIA

NAMIBIA

CONGO

BC98AA02.PPT

CURRENT WORLDWIDE SOF DEPLOYMENTS



SUMMARY FOR WEEK OF: 31 JAN - 6 FEB 98	COUNTRIES & FOREIGN TERRITORIES	UNITED STATES & TERRITORIES	FY98 WEEKLY PERSONNEL FIGURES	
			PEAK	AVERAGE
CONUS	0	28	2,775	1,705
OCONUS	63	4	4,695	3,122
COMBINED	*63*	*32*	*6,831*	*4,827*

CC93FB07.PPT

COMPELLING REASONS FOR CHANGE

FUTURE OPERATING ENVIRONMENT

- FEWER "WARS," MORE CONFLICT
- INCREASED PEACETIME ENGAGEMENT
- ASYMMETRIC OPPONENTS
- "PUNCTUATE" INFORMATION OPERATIONS
- MORE SUN TZU, LESS CLAUSEWITZ

IMPACT OF TECHNOLOGY

- ENHANCE SOF
- REPLACE SOF?
- DISTRIBUTED THREATS
- NECESSITY FOR INFORMATION DOMINANCE
- NO SILVER BULLET

CHANGING CONVENTIONAL FORCE CAPABILITIES

SMALLER FOOTPRINT - MASSED EFFECTS, NOT FORCES

- PLUS -

INCREASING PRECISION, MOBILITY

- EQUALS -

MORE LIKE SOF

"WILD CARDS"

CC97KA19.PPT

TRANSFORMING SOF

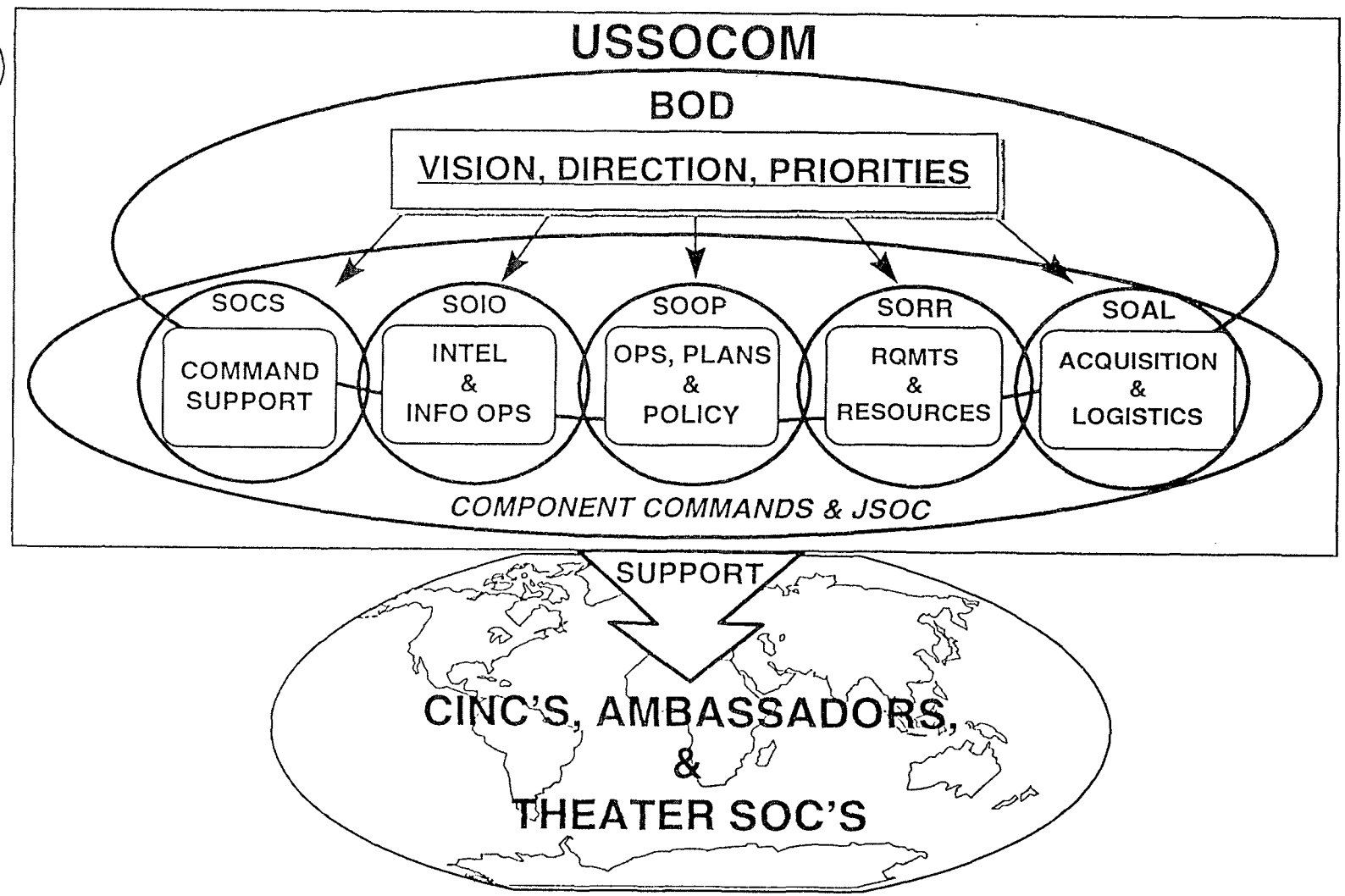
- MUST EVOLVE TO REMAIN RELEVANT
- WHICH CAPABILITIES TO...
  - RETAIN?
  - DEVELOP?
  - SHIFT TO CONVENTIONAL FORCES?
- SOF TRUTHS STILL APPLY...
  - HUMANS ARE MORE IMPORTANT THAN HARDWARE
  - QUALITY IS BETTER THAN QUANTITY
  - SOF CANNOT BE MASS PRODUCED
  - COMPETENT SOF CANNOT BE CREATED AFTER CRISES OCCUR



ORGANIZED FOR SUCCESS

STRATEGIC

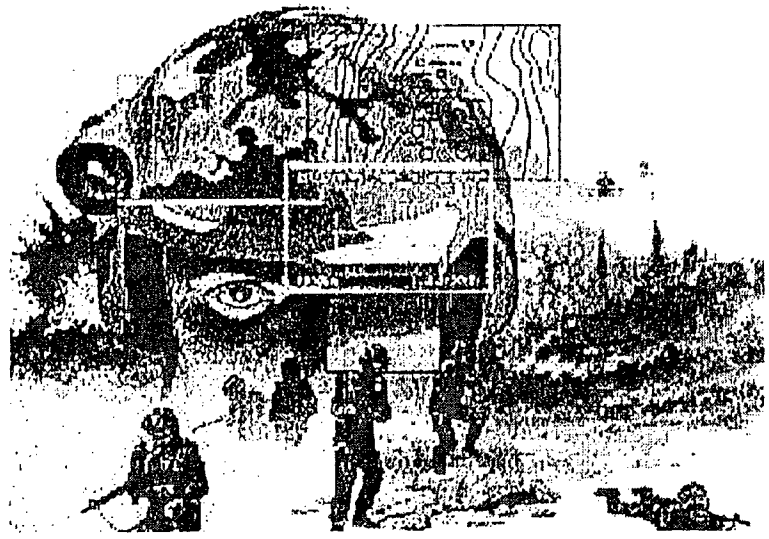
TACTICAL



EYES WIDE OPEN

21st CENTURY SOF

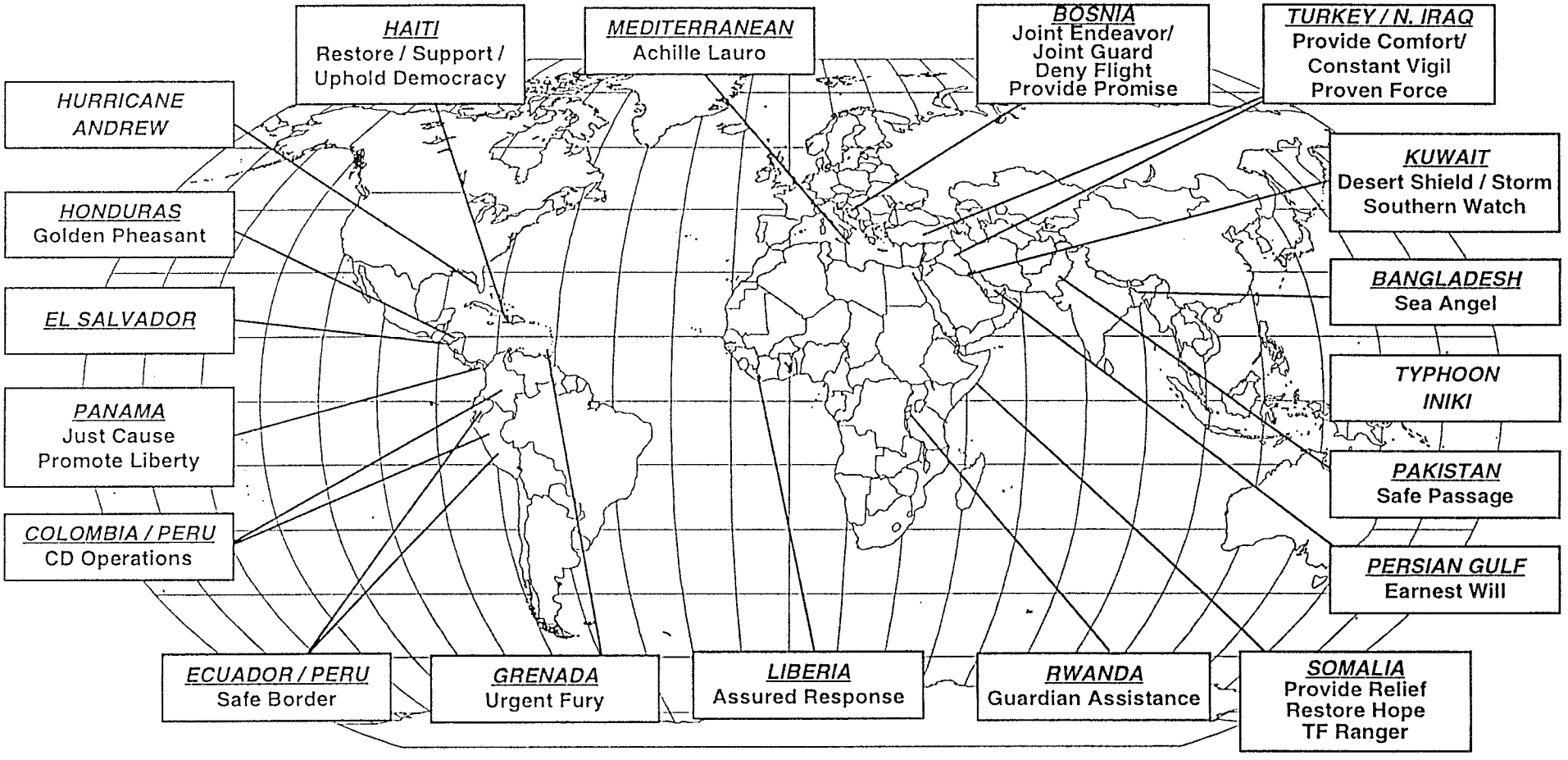
- EMBRACE AND INSTITUTIONALIZE THE PROCESS OF CHANGE... ONLY CORE VALUES PERMANENT
- LEVERAGE TECHNOLOGY TO ENHANCE HUMAN DIMENSION
- TRAIN FOR CERTAINTY, EDUCATE FOR UNCERTAINTY
- CONDUCT STRATEGIC OPERATIONS IN TACTICAL ENVIRONMENTS
- PROVIDE U.S. WITH...
  - ECONOMY OF FORCE
  - EXPANDED OPTIONS
  - "TAILOR TO TASK" CAPABILITIES



FULL SPECTRUM FORCE: HAITI ⇨ STARSHIP TROOPERS

BC97KA21.PPT

SOF...
OUR PAST IS PROLOGUE



CC96FA19.PPT

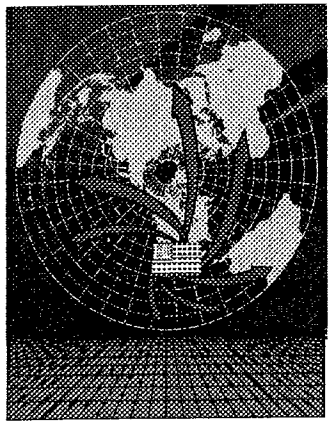


ENDPATCH.PPT

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DYNAMIC COMMITMENT



A Risk Assessment of Projected US Forces Against the JSR World

Presentation to
9th Annual
National Defense Industrial Association
Special Operations/
Low Intensity Conflict (SO/LIC)
Symposium and Exhibition
February 18, 1998

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DYNAMIC COMMITMENT
THE AGENDA

- *DYNAMIC COMMITMENT* Series Overview
- Game Series Design
- Game Series Execution
- Game Series Product

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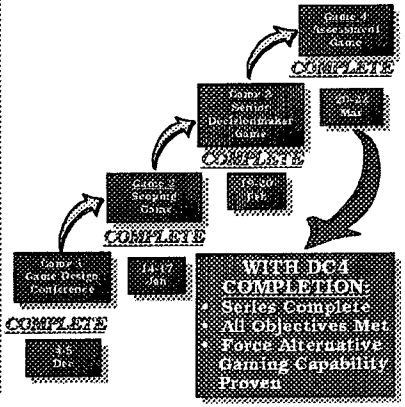
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DYNAMIC COMMITMENT
THE OVERALL GAME SERIES

A STRATEGIC LEVEL, FORCE ALLOCATION WARGAME SERIES, IN SUPPORT OF THE QDR, WITH FOUR MAJOR OBJECTIVES:

- Identification of the suitability of the Projected US Forces (POM Force) to meet future challenges in light of policies, strategies, and operational approaches
- Identification of key diplomatic, strategic, and operational risks associated with the future employment of force
- Integration of various elements of the QDR Process
- Building a group of informed experts



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DYNAMIC COMMITMENT 2/4
A UNIQUE "TEAM OF TEAMS"

Over 200 participants, representing the following organizations:

BLUE TEAM
(Game Players)
- **Services:** USA, USN, USMC, USAF, USCG, SOCOM
- **CINCs:** ACOM, CENTCOM, SOUTHCOM, EUCOM, PACOM
- **Reserve Component:** One NG, One Reserve Rep per Team (Service Varies)

GOLD TEAM
(Risk Assessment Team)
- **Services:** USA, USN, USMC, USAF SOCOM
- **Joint Staff:** Force Assessment, Readiness, Strategy, IO QDR Panels; JWFC
- **OSD:** ASD(S&R), ASD(PA&E)

GREEN TEAM
(Support Element Team--Lift, Log, C4ISR, Mod, Personnel)
- **Services:** USA, USN, USMC, USAF, USCG, SOCOM
- **CINCs:** SPACECOM, TRANSCOM (w/Components)
- **Joint Staff:** Infrastructure, Human Resources, IO QDR Panels
- **OSD:** DUSD(L), ASDC3I, ASD(PA&E)
- **Agencies:** DLA, NSA, DIA, CIO, NIMA, DARO, NRO

PURPLE TEAM
(Resource Cell)
- **CINCs:** NORAD, STRATCOM, USFK, SOCOM
- **Joint Staff:** Reserve Component Rep

SILVER TEAM
(Oversight/NCA Element)
- **Services:** USA, USN, USMC, USAF
- **Joint Staff:** VDJ-8, Mobilization Asst
- **OSD:** DASD (Strategy)

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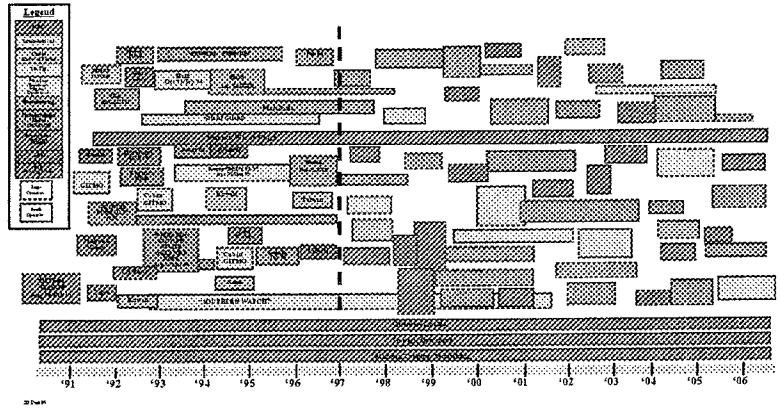
DYNAMIC COMMITMENT
THE BRIEFING AGENDA

- *DYNAMIC COMMITMENT* Series Overview
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DYNAMIC COMMITMENT
ILLUSTRATIVE VISION OF THE FUTURE



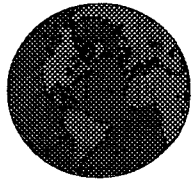
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DYNAMIC COMMITMENT
VIGNETTE DEVELOPMENT

- Illustrate full spectrum of US Military commitments over recent history, as well as capabilities addressed in strategy, short of MTW
- Hypothetical locations balanced across all regional CINC AORs
- Incorporate allied/coalition support, where likely
- Include CONOPs/Force Lists:
  - Derived from historical operations/DPG/OPLANs
  - Vetted among key participants--OSD/JS/CINCs/Services

Opposed Intervention
Crisis Response
NEO
Peace Operation
Humanitarian Assistance



Alien Migrant Interception
Maritime Sanction
Show of Force
Disaster Relief
No-Fly Zone Enforcement

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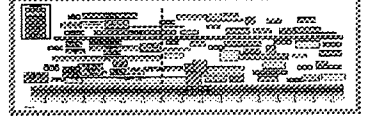
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DYNAMIC COMMITMENT
"BUILDING THE FUTURE"

- Event loading, by year, derived from historical experience/QDR Defense Strategy
- Ongoing real-world events continue
- Specific event laydown randomly-generated from bank of 50 OSD/JS/CINC/Service-vetted vignettes and 5 NCA-directed Small Shows of Force
- 2MTW positioned as desired to test "swing" impacts



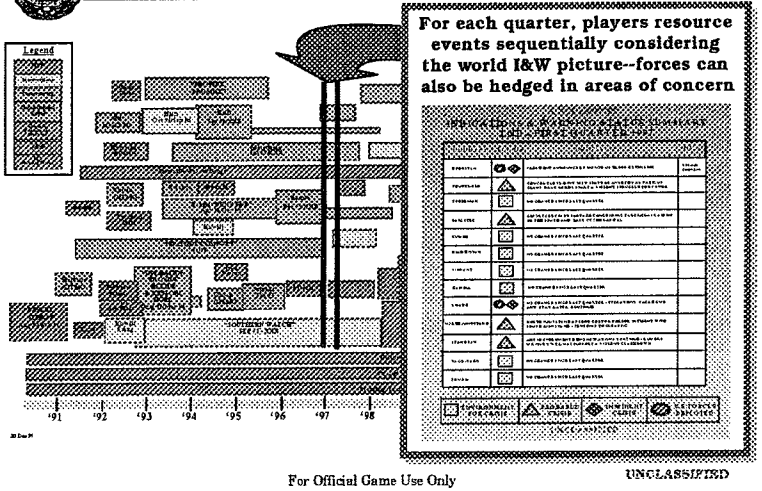
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DYNAMIC COMMITMENT
THE FUTURE--QUARTER BY QUARTER



For each quarter, players resource events sequentially considering the world I&W picture--forces can also be hedged in areas of concern

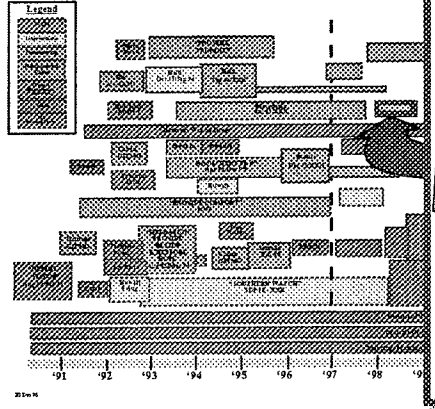
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DYNAMIC COMMITMENT
EACH QUARTER--ONE EVENT AT A TIME



For each new vignette in a quarter, sequentially revealed:

- All Review Vignette Summary
- CINC States Force Requirements Based on Concept of Operations
- Svcs Resource CINC Requests
- CINCs/Svcs Resolve Disparities
- Next Vignette is Revealed

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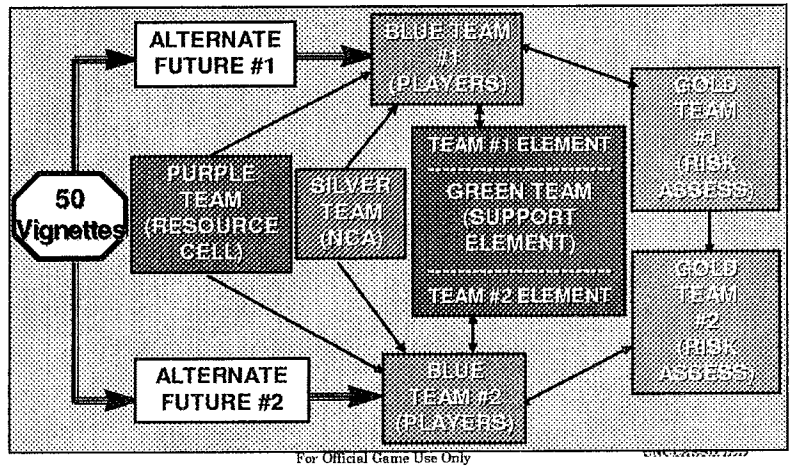
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DYNAMIC COMMITMENT 2/4
TEAM INTER-RELATIONSHIPS



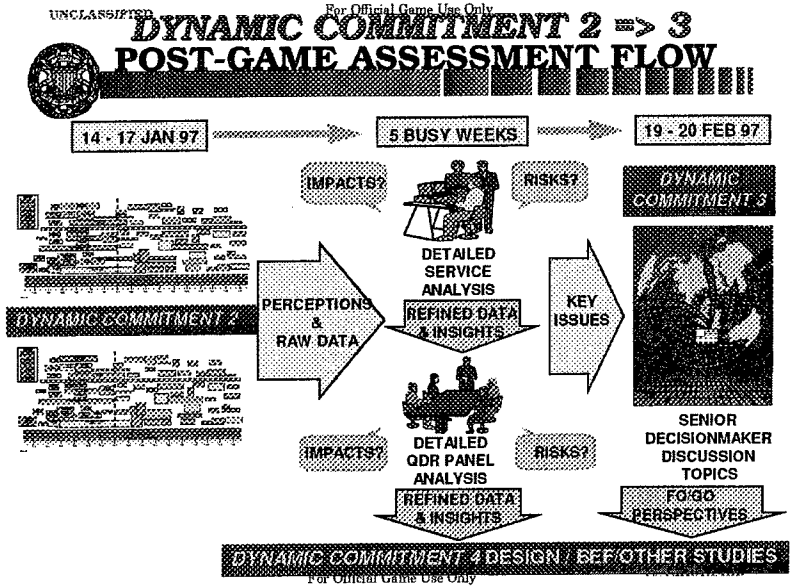
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DYNAMIC COMMITMENT 2 => 3
POST-GAME ASSESSMENT FLOW



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DYNAMIC COMMITMENT 3
CONSENSUS-BUILDING/PROCESS-SHAPING

THE ISSUES

Force Projection
- Forward Basing/Access/Overflight
- Strategic Mobility
- Logistics
- Lack of Clear Termination Objectives
- Contingency Funding

Force Availability
- OPSTEMPO & PERSTEMPO Impacts
- Low Density/High Demand Assets
- AC/RC
- Allies/Coalition Relationships
- Reconstitution/Post-Conflict Ops
- Force Fencing/Shifting CINC Assets
- Modernization vs. Less Force
- Force Alternatives

THE OUTCOME

Game participants influenced *DYNAMIC COMMITMENT* in the following areas:

- Access constraints
- Mobility analysis
- Event duration/force withdrawal patterns
- OPSTEMPO/PERSTEMPO evaluation
- LD/HD asset identification
- Post-engagement readiness limitations
- Alternative force structure characterization

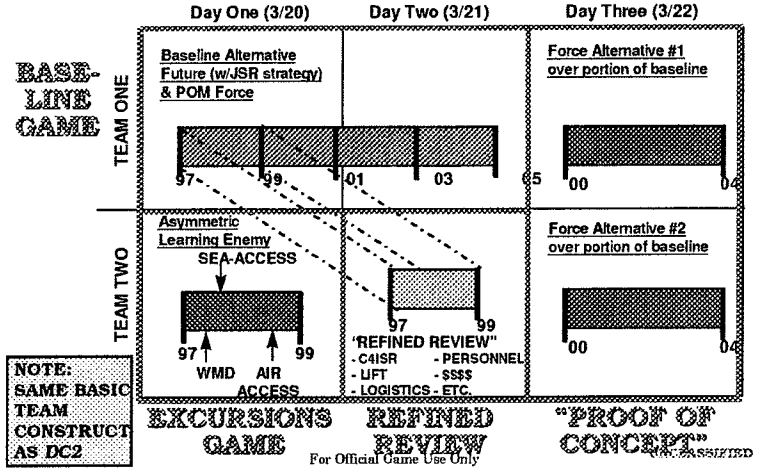
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DYNAMIC COMMITMENT 4
4 DISTINCT GAMING ELEMENTS



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DYNAMIC COMMITMENT
THE BRIEFING AGENDA

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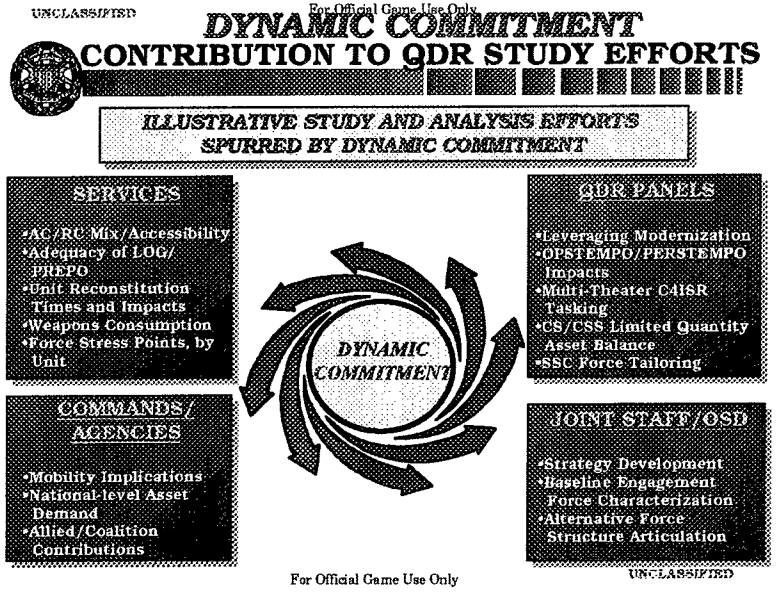
DYNAMIC COMMITMENT
GAMEPLAY INSIGHTS

- Projected US Forces suitable, though stressed, to execute proposed National strategy over a representative future (2 MTWs not "fought"; Forces apportioned only). Risks noted:
  - Forward presence challenges illuminated
  - OPSTEMPO/PERSTEMPO stressed
  - LD/HD (and limited quantity item) shortfalls in allocation & use
- Forward presence remained a cornerstone of defense strategy execution
- Current force structure fragile; reductions, especially in uniquely-configured platforms or units must be considered carefully--Services can specifically identify where they cannot take cuts

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DYNAMIC COMMITMENT
GAMEPLAY INSIGHTS

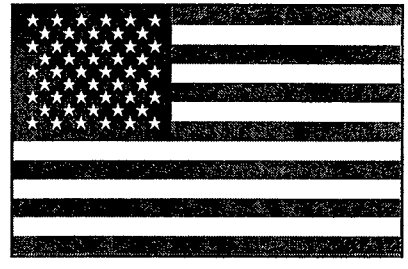
- GMFP, JSCP, and Forward Presence requirements should be revisited in conjunction with any substantial force cuts
- Pace of force deployment, not force levels, tended to decrease when a WMD threat was introduced
- WMD environment raised the level of awareness regarding force protection, enhancing the perceived value of "over-the-horizon" or stand-off forces
- Sequential deployments in the SSC environment may have a cumulative, negative impact on the all-volunteer force
- PSRC processing time should be factored in when planning for Reserve employment
- NOTE: Service- and panel-specific insights were used to shape their own respective QDR inputs


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DYNAMIC COMMITMENT
CONTRIBUTION TO QDR STUDY EFFORTS
ILLUSTRATIVE STUDY AND ANALYSIS EFFORTS SPURRED BY DYNAMIC COMMITMENT
SERVICES
•AC/RC Mix/Accessibility
•Adequacy of LOG/PREPO
•Unit Reconstitution Times and Impacts
•Weapons Consumption
•Force Stress Points, by Unit
QDR PANELS
•Leveraging Modernization
•OPSTEMPO/PERSTEMPO Impacts
•Multi-Theater C4ISR Tasking
•CS/CSS Limited Quantity Asset Balance
•SSC Force Tailoring
DYNAMIC COMMITMENT
COMMANDS/ AGENCIES
•Mobility Implications
•National-level Asset Demand
•Allied/Coalition Contributions
JOINT STAFF/OSD
•Strategy Development
•Baseline Engagement Force Characterization
•Alternative Force Structure Articulation
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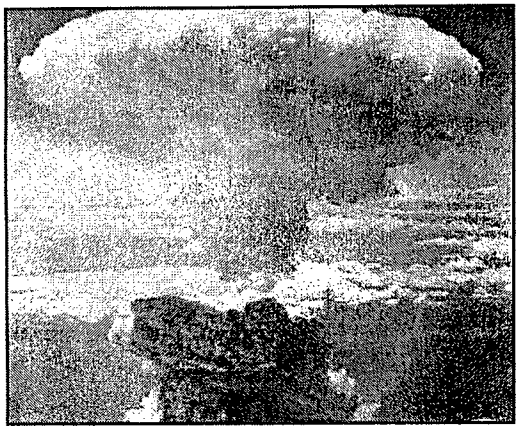
Presentation to the
National Defense Industrial Association's
9th Annual Special Operations / Low Intensity Conflict Symposium
18 February 1998

Planning Today For Tomorrow's Realities

BG Robert J. St. Onge Jr.
Deputy Director,
Strategy, Plans, and Policy
ODCSOPS, HQDA



Adapting to a Changing World



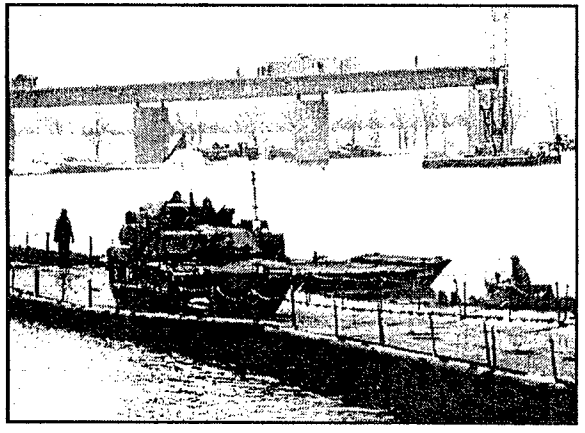
1945



1989



1945-1989



1989-2010...and Beyond

"The security challenges of a largely bipolar world have been replaced with more ambiguous and, in some cases, equally dangerous problems."

--General John M. Shalikashvili, former CJCS

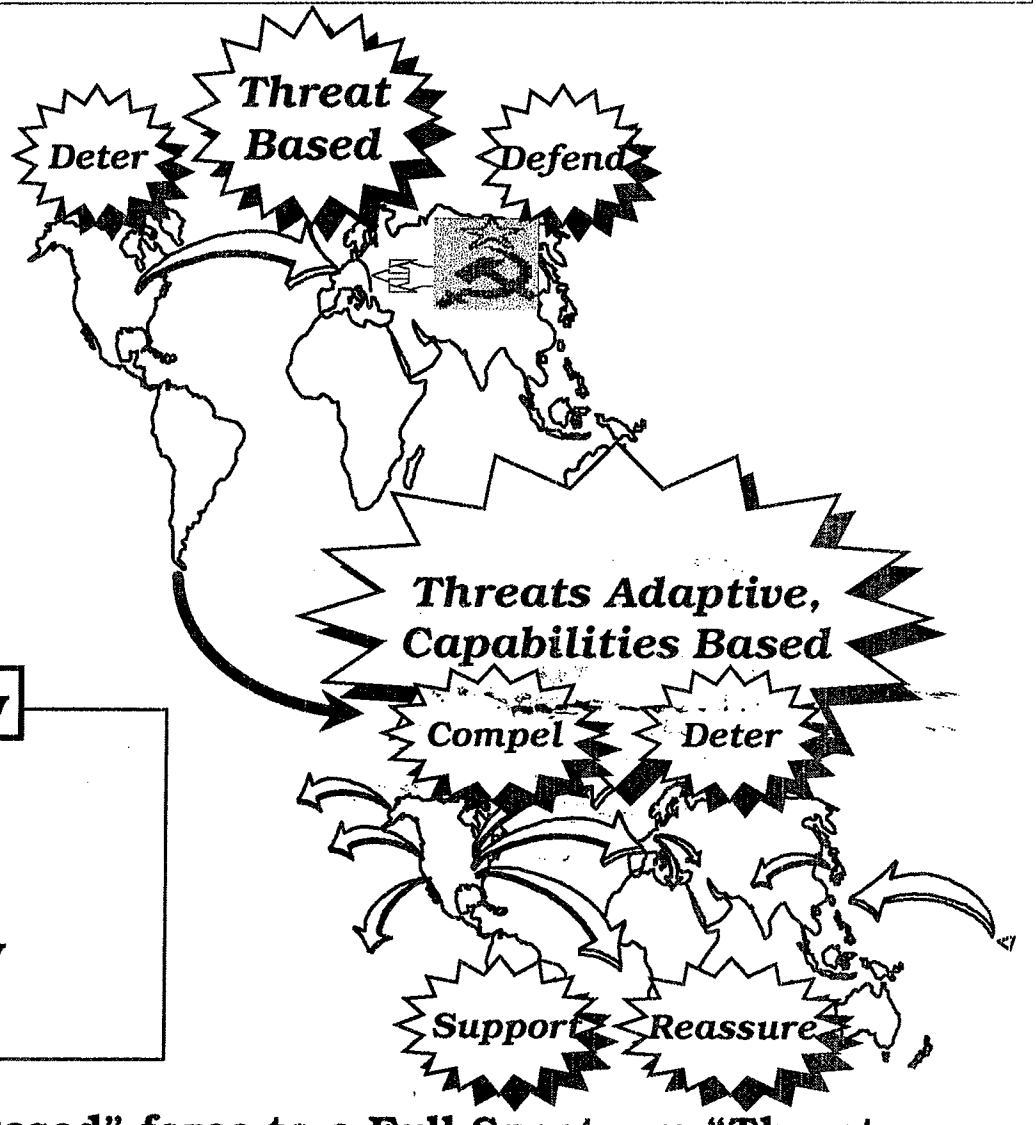
The Strategic Environment Has Changed

Yesterday

- Containment Strategy
- Forward-Based
- Global, Nuclear War Focus
- Monolithic Soviet/WP Threat
- Deter and Defend

Today and Tomorrow

- Engagement Strategy
- Globally Engaged, Strategically Positioned
- Regional Conflict Focus
- Major Regional Competitor Only
- Full Spectrum Force
- Supporting the Nation



We have changed from a "Threat Based" force to a Full Spectrum "Threats Adaptive, Capabilities Based" force ready for the challenges of today and tomorrow...

Good News

Cold War Victory Ends Threat of Global Hostilities...



CONTAINMENT ⇨ ENGAGEMENT

Security — Prosperity — Democracy

Allows Increased Emphasis On...

- Planning Regionally
- Helping Coalition Partners
- Working Multilaterally
- Promoting Democratic Institutions
- Interagency Coordination

Bad News

...But The World is Still a Dangerous Place

Global Peer Unlikely

Multi-Polar

Transnational Dangers



Threats to US Homeland

Regional Dangers

Proliferation of Advanced Technologies

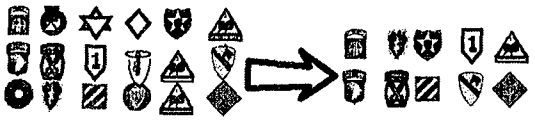
Asymmetries

Key Uncertainties - Russia and China

OUR ASSERTION: THE U.S. ARMY HAS BEEN OPERATING IN THE STRATEGIC ENVIRONMENT OF THE 21ST CENTURY SINCE 1989

Adapting to a Changing World

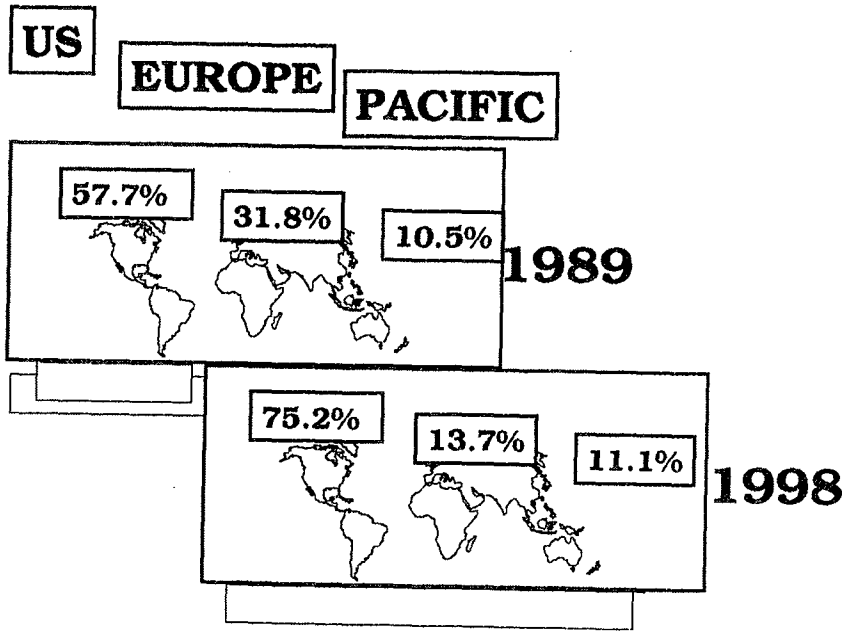
Deactivated and Reorganized Units



18 TO 10 Active Component Divisions



10 TO 8 Reserve Component Divisions



European End Strength from 232,000 to 65,000

Personnel Strength (1985-1998):

Active Army -- 781K > 495K
Reserve/Guard -- 776K > 575K
Civilians -- 402K > 236K

Readiness:

NTC/JRTC/CMTC/BCTP
OPTEMPO/PERSTEMPO Up "#@&" %
16X More Deployments

Nuclear Free Force

40% Decrease in Army Budget

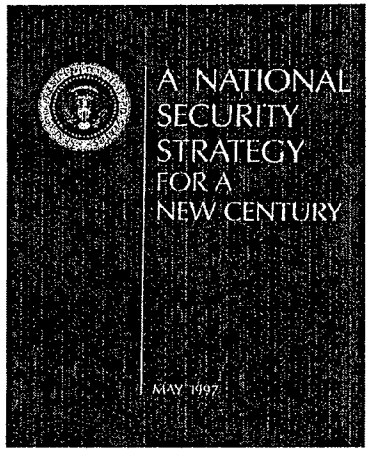
Base Realignment And Closure

(BRAC)

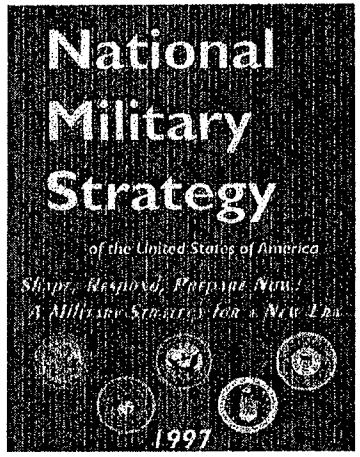
US	Overseas
84 Bases Closed	660 Bases Returned
69 Bases Realigned	
Realigned Labs	

The Pillars of Our National Strategy

NSS



NMS



Critical Goals

- **Enhance Security by Maintaining A Strong Defense**
- **Bolster Prosperity by Working to Open Foreign Markets and Spur Economic Growth**
- **Promote Democracy**

Elements of Strategy

- **Shape**
- **Respond**
- **Prepare Now**

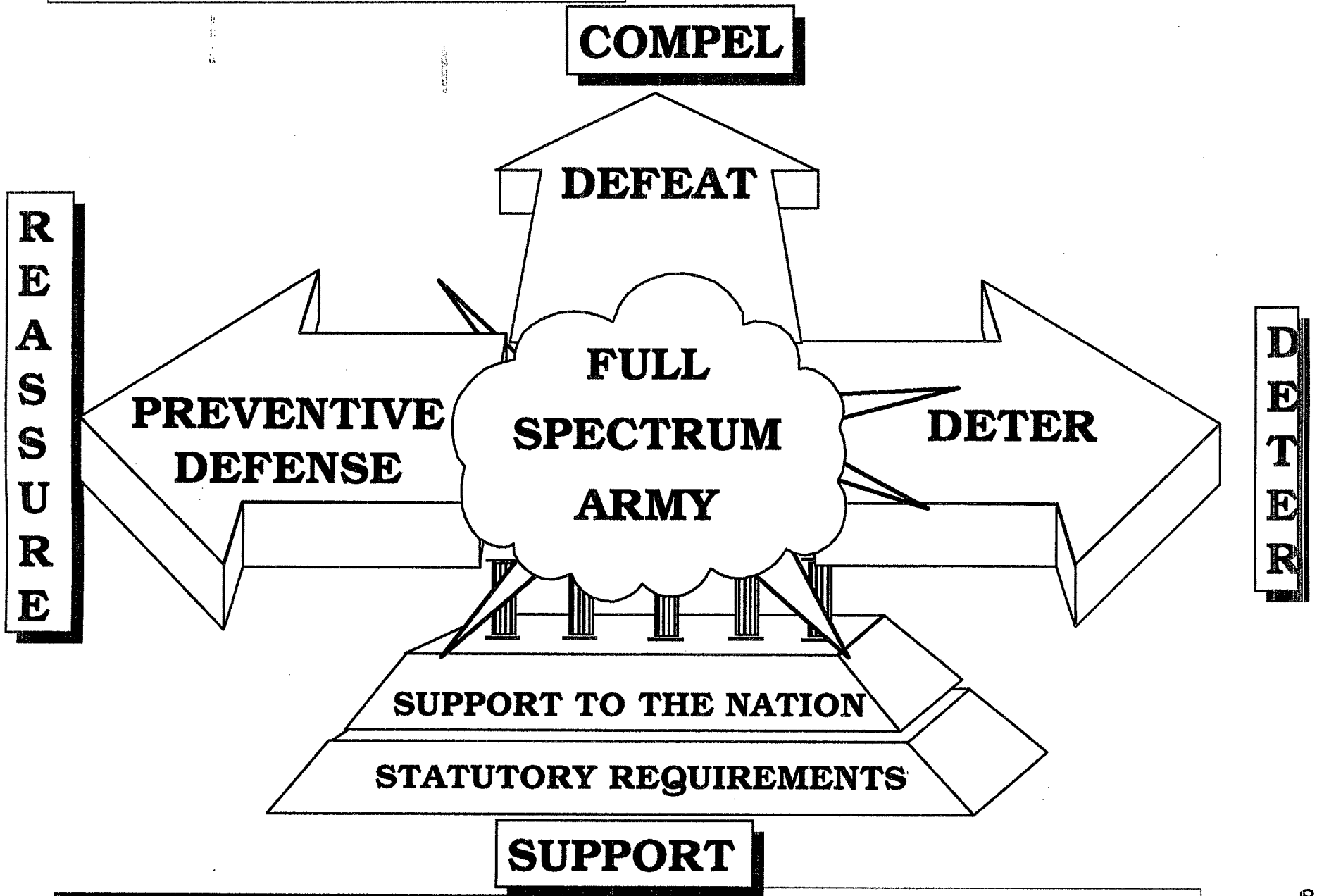
Strategic Concepts

- **Strategic Agility**
- **Overseas Presence**
- **Power Projection**
- **Decisive Force**

"To be secure and prosperous, America must continue to lead"

-- President William J. Clinton

The Army's Roles

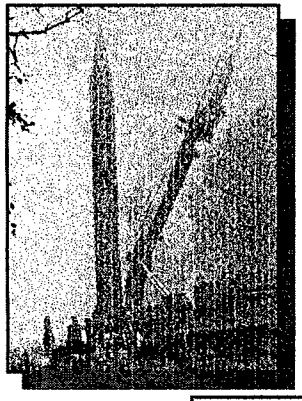


Reassure Friends and Allies

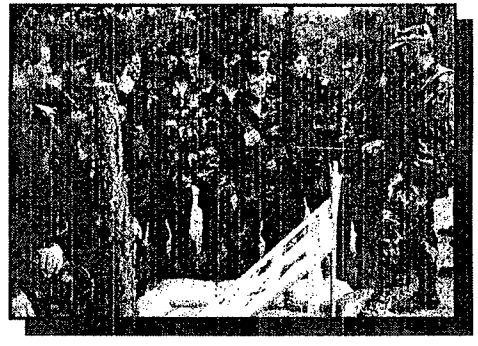
Prevent/Reduce Conflict and Threats



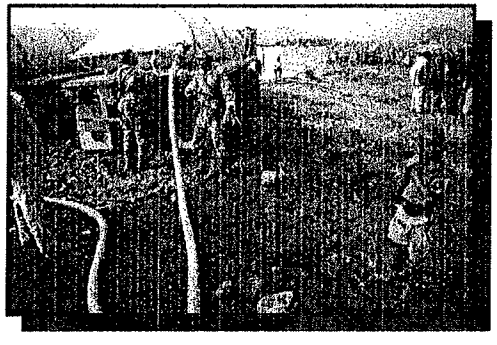
Counter Proliferation of Weapons of Mass Destruction (WMD)



Strengthen Cooperative Defense-to-Defense Relationships



Relieve Suffering



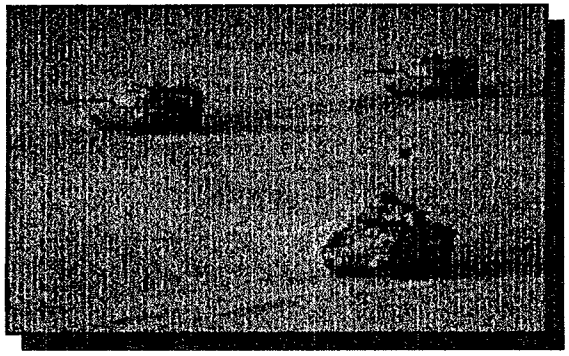
Promote Regional Stability



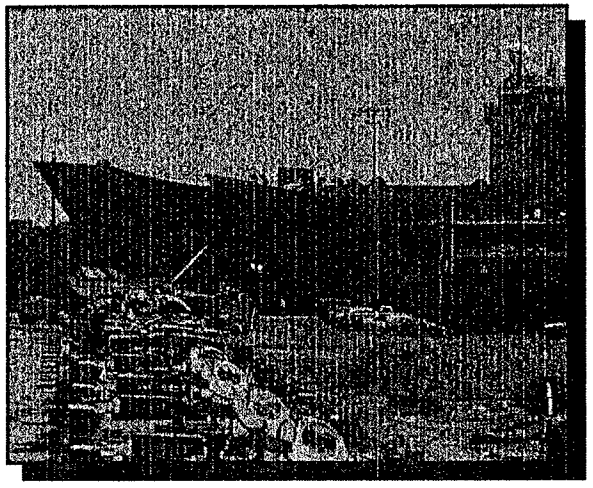
Deter Aggression and Coercion

Why Deterrence Works Today

Demonstrated Capabilities



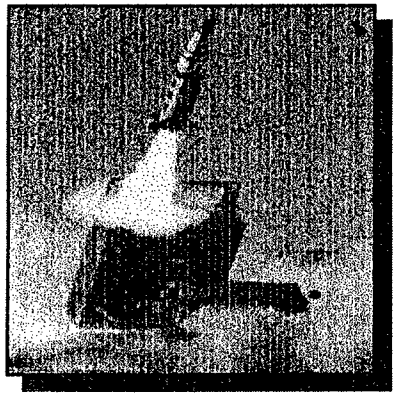
Power Projection Capabilities



Operational Doctrine



Technological Edge



Peacetime Engagement

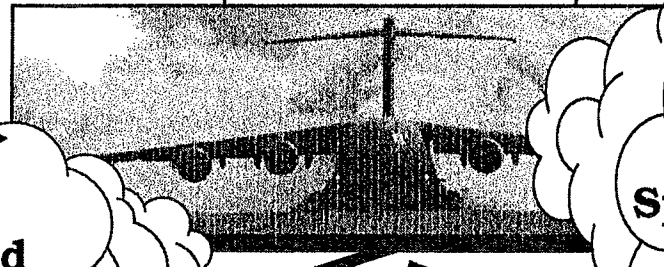


The Strategic Mobility Triad

Global Flexibility for a Globally Engaged, Strategically Positioned Army

Endstate:
120+C-17s

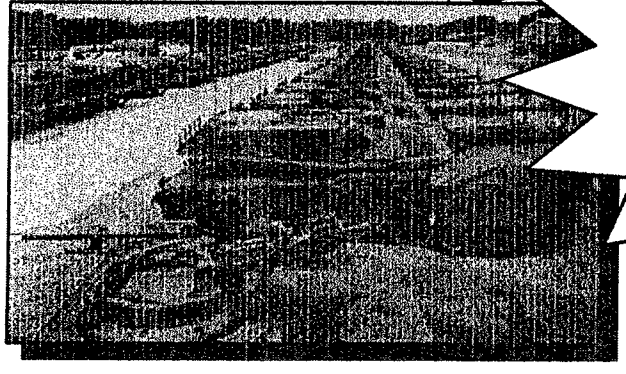
AIRLIFT



Endstate:
8 Fast Sealift Ships
19 Large Medium Speed Roll On/Roll Off Ships
36 Roll On/Roll Off Ships

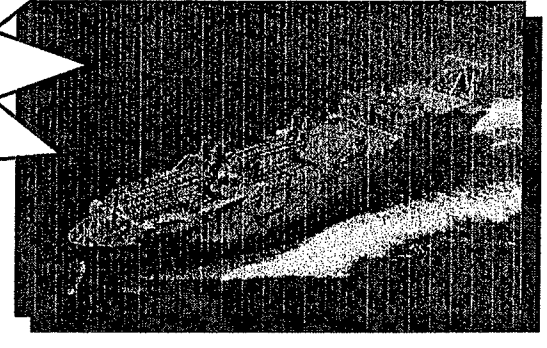
Endstate:
Prepositioned Equipment:
8 Brigade Sets
1 Division Base

PREPO

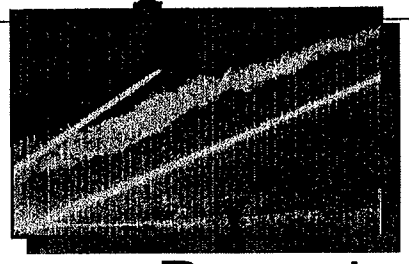


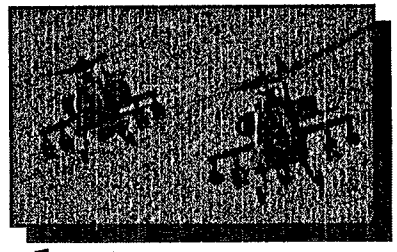
1st Cavalry Division
3rd Brigade Combat Team
from Fort Hood to Kuwait in 120 hours

SEALIFT



Compel Our Enemies

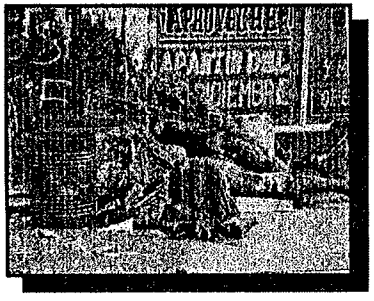




- Prompt and Sustained Land Combat

- Full Spectrum Dominance



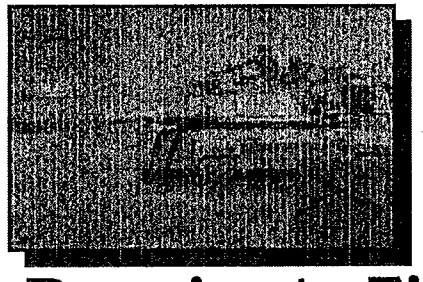


- Appropriate Force Mix

- Operational Overmatch

- Conduct Major Theater War as Part of the Joint Team





Bottom Line: Purpose of the Army Remains to Fight and Win Our Nation's Wars As Part of the Joint Team

Support To The Nation



- **Use of Military Resources to Support Critical Domestic Needs**
- **Activities Conducted to Assist Local, State, and Federal Agencies in Emergencies**
- **Continued Improvement and Development of the Nation**

Recent Examples:

Hurricanes Marilyn and Fran,
Los Angeles Riots,
Western Wild Fires, Midwest Floods,
Oklahoma City Bombing,
1996 Olympics,
1998 Ice Storms in the Northeast U.S.



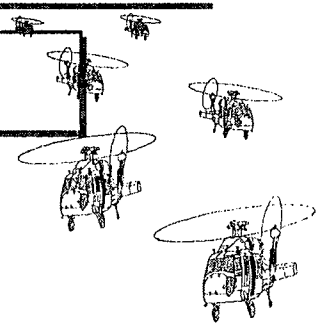
A Versatile Force

Airborne



- Forced entry ...18 hour notice ... wheels up
- Embedded anti-tank capability
- Clear demonstration of U.S. resolve

Air Assault



- Forced entry...early entry
- Covering force capabilities
- Great anti-tank
- Deep strike ... deep maneuver ... simultaneous operations

Light



- Deployable in 200+ C17 equivalents
- Close combat ... day/night ... all weather... all terrain
- Relatively high shooter to supporter ratio

Tailorable Capabilities

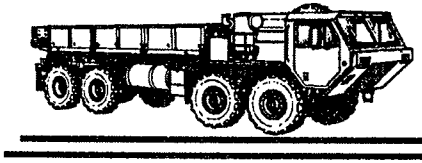
Special Operations

- Train and assist foreign military forces
- Perform special reconnaissance
- Counterterrorism
- Direct Action Missions
- Civil Affairs and PSYOPS



Combat Service Support

- Sustain and Support Army missions from warfighting to disaster relief
- Total Asset Visibility
- Modular Logistics Units
- Versatile, Flexible, and Robust



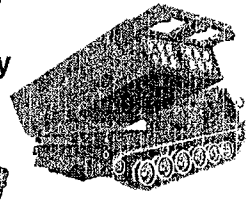
Reserves / National Guard

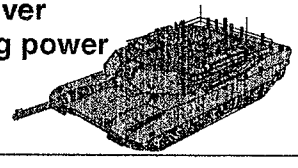
- Essential Component of the Total Army Force
- Augments essential capabilities not found in the active force
- Increasingly important role in peacetime engagement missions



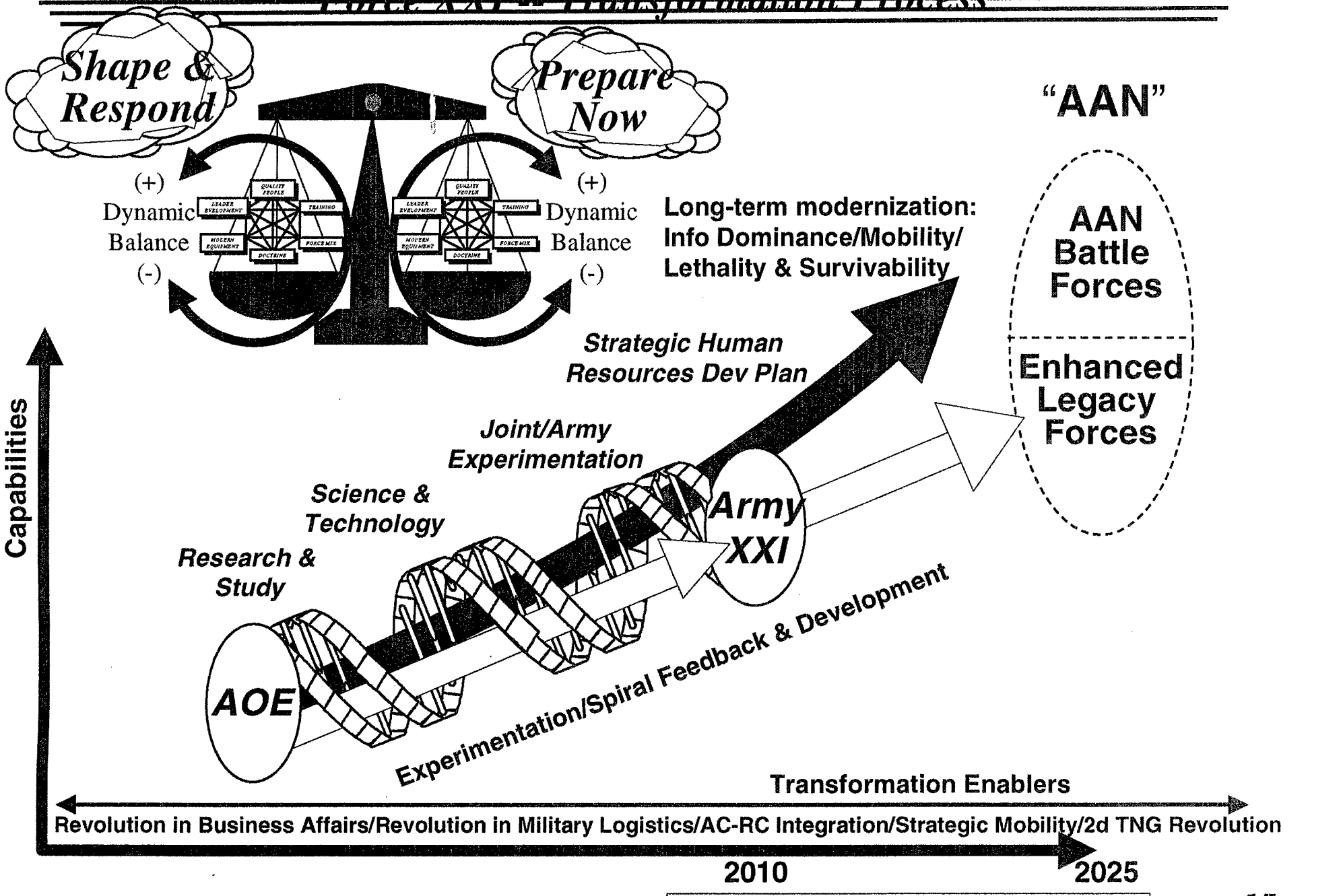
Heavy

- Decisive Corps of U.S. military power... mass and momentum
- Improved strategic mobility
- Deep fires and deep maneuver
- Staying power



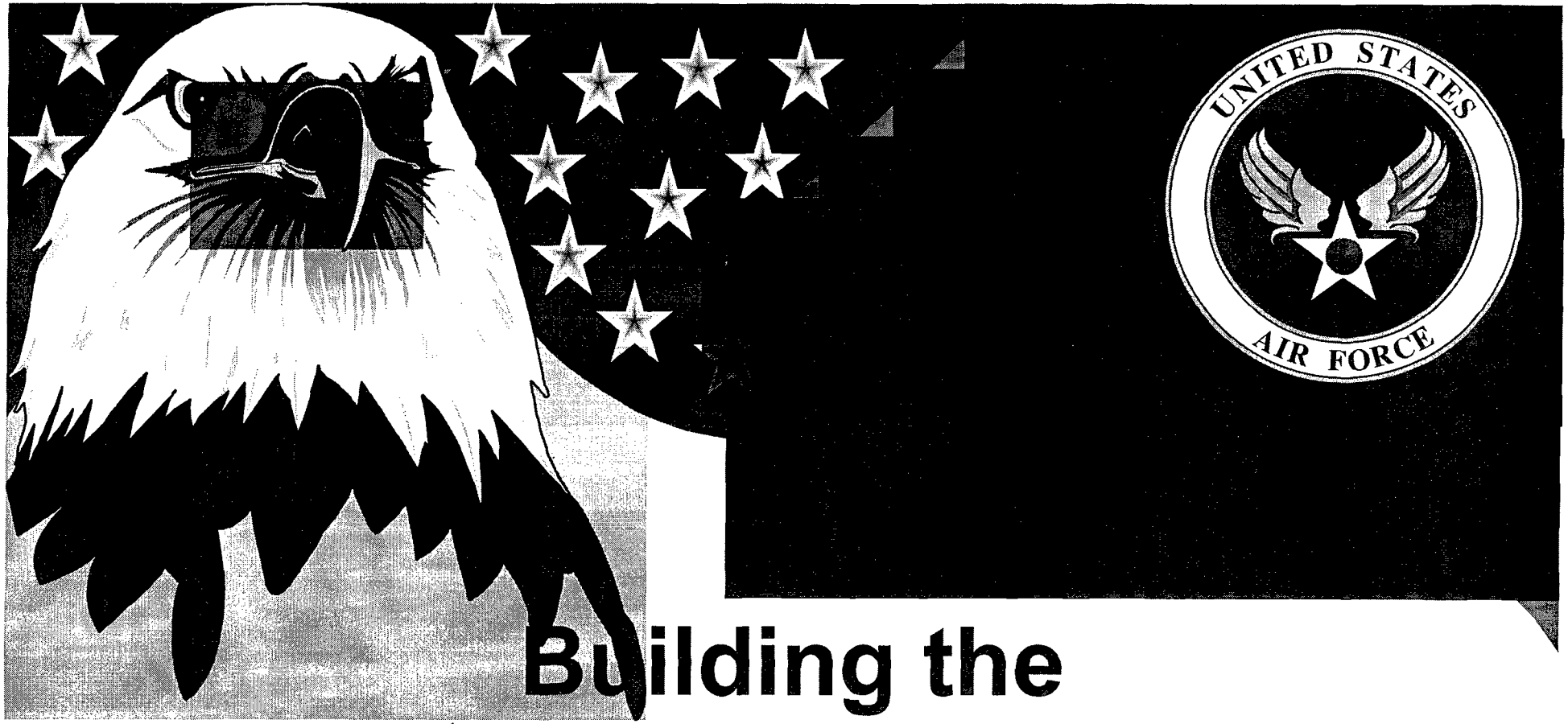


Force XXI -- Transformation Process



The Army Vision

- **A full spectrum force--trained and ready for victory. A Total Force of quality soldiers and civilians.**
- **A values-based organization**
- **An integral part of the Joint Team**
- **Equipped with the most modern weapons and equipment the Country can provide**
- **Able to respond to our Nation's needs**
- **Changing to meet challenges of today . . . tomorrow . . . and the 21st Century**

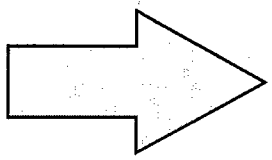


Building the 21st Century Air Force

Brig Gen John Harvey
AF/XPX
AFRC

18 Feb 98

My Briefing Plan

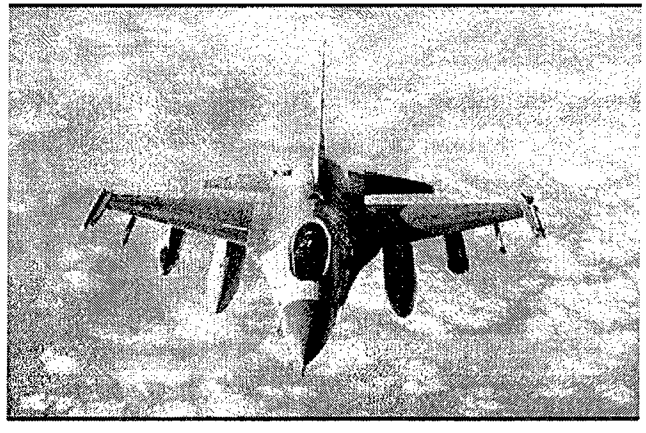


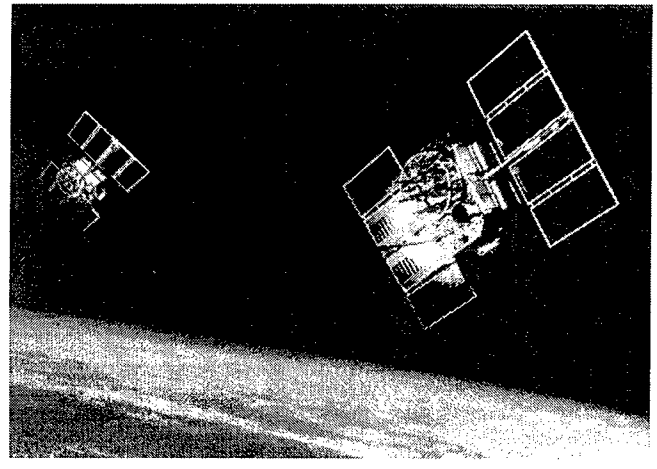
- The Air Force's Approach
- Building the Strategic Vision
- Implementing The Vision
- Path Ahead

Integration of Air and Space

Air Force will fully integrate air and space into all its operations as it transitions from an air force into an air and space force on its evolutionary path to a space and air force.

- **Trained Operators**
- **Organized for Operations**
- **Seamless Ops and Sustainment**
- **Superior Stewardship**

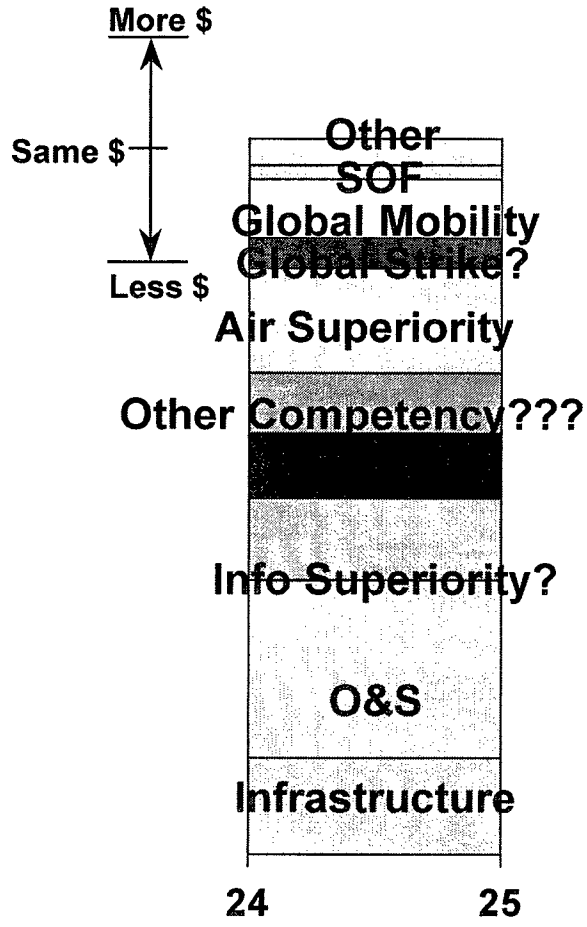




First Step

Determine Long-Range Strategic Priorities

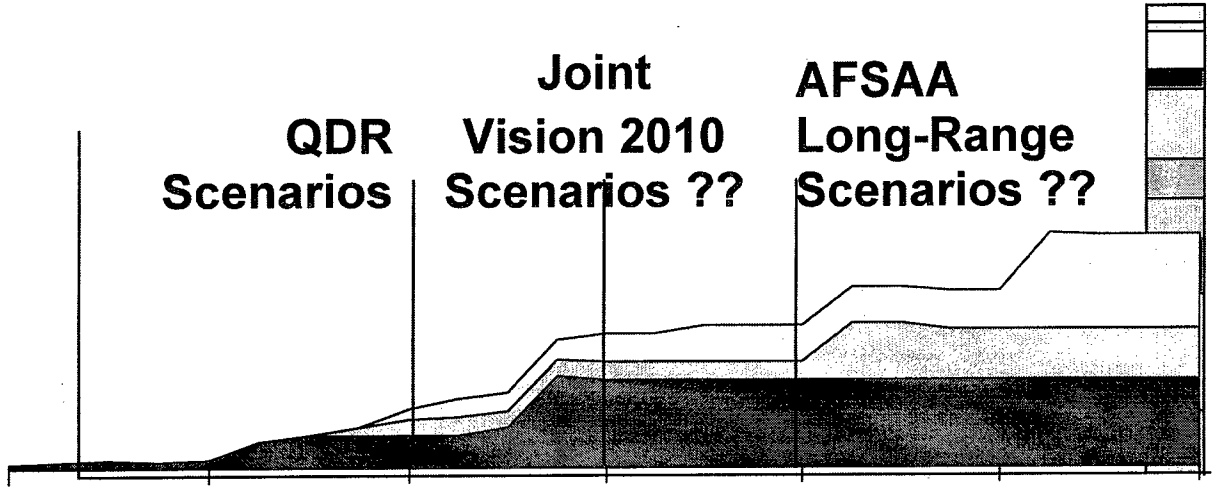
- Based on 2025 future planning
  - Future threats
  - Future missions
  - Future operating environments
  - Future of warfare
- Priorities - relative importance
- Major investment decisions
- 2025 Strategic Vision



Second Step

"Backcast" Future Priorities

- Determine near-term actions
- Provide midpoint guidance for operational requirements as illuminated in scenarios
- Identify key transition points--start R&D, sunset, opportunity points



"Front End Guidance" for Modernization Planning Process (MPP)

equates to

"Backcasting 2025 Priorities"

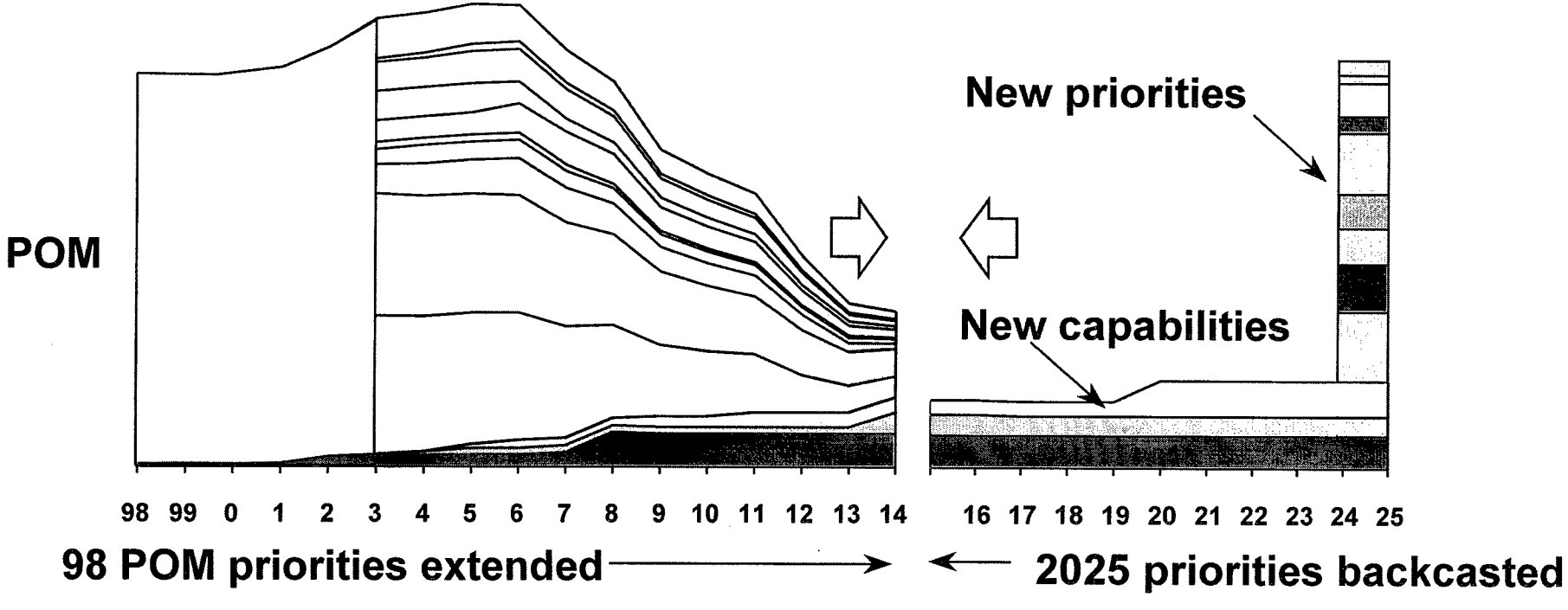
← 2025 priorities backcasted

Third Step

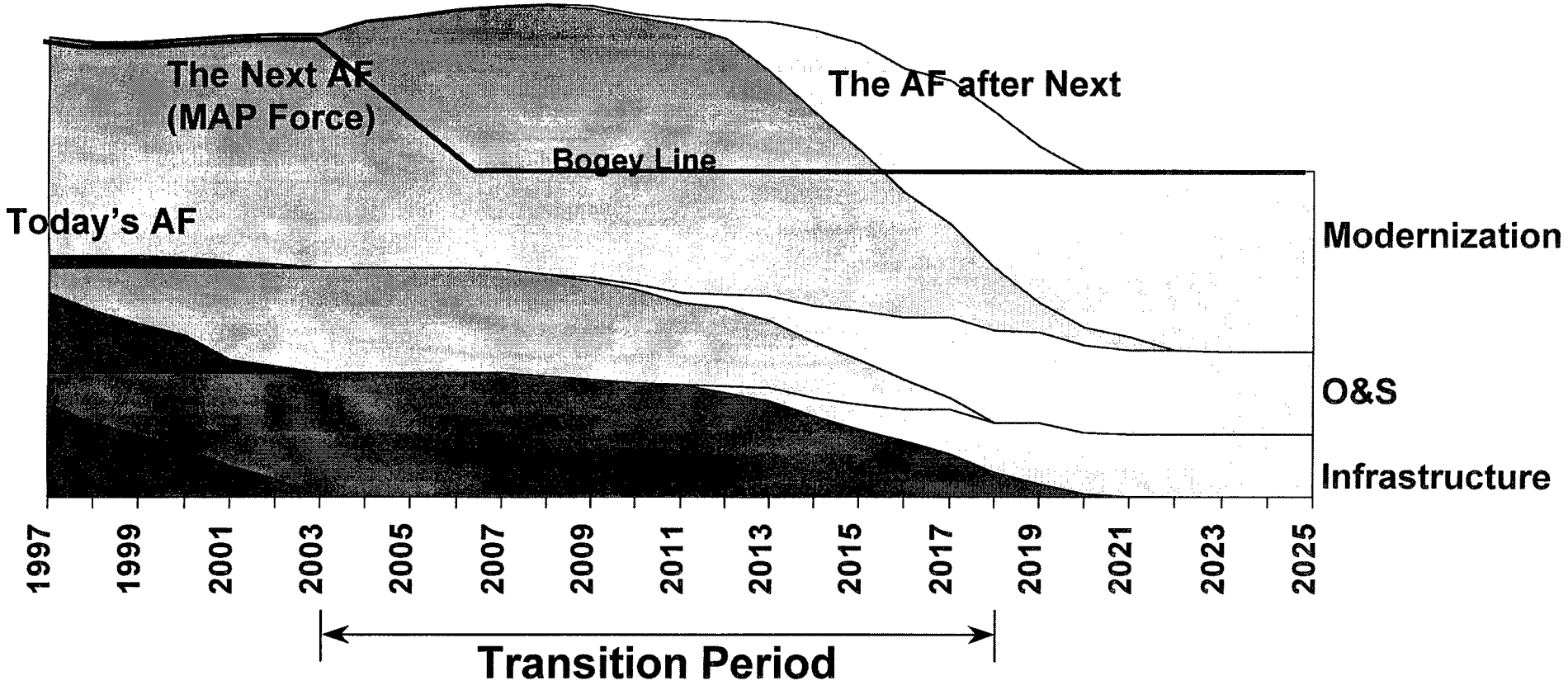
Transition Planning

- MPPs focus on balancing midpoint operational requirements and investment plan for 2025 force

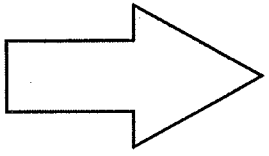
- Mid-point operational requirements
- Transition decisions
- POM impact



The Transformation Challenge

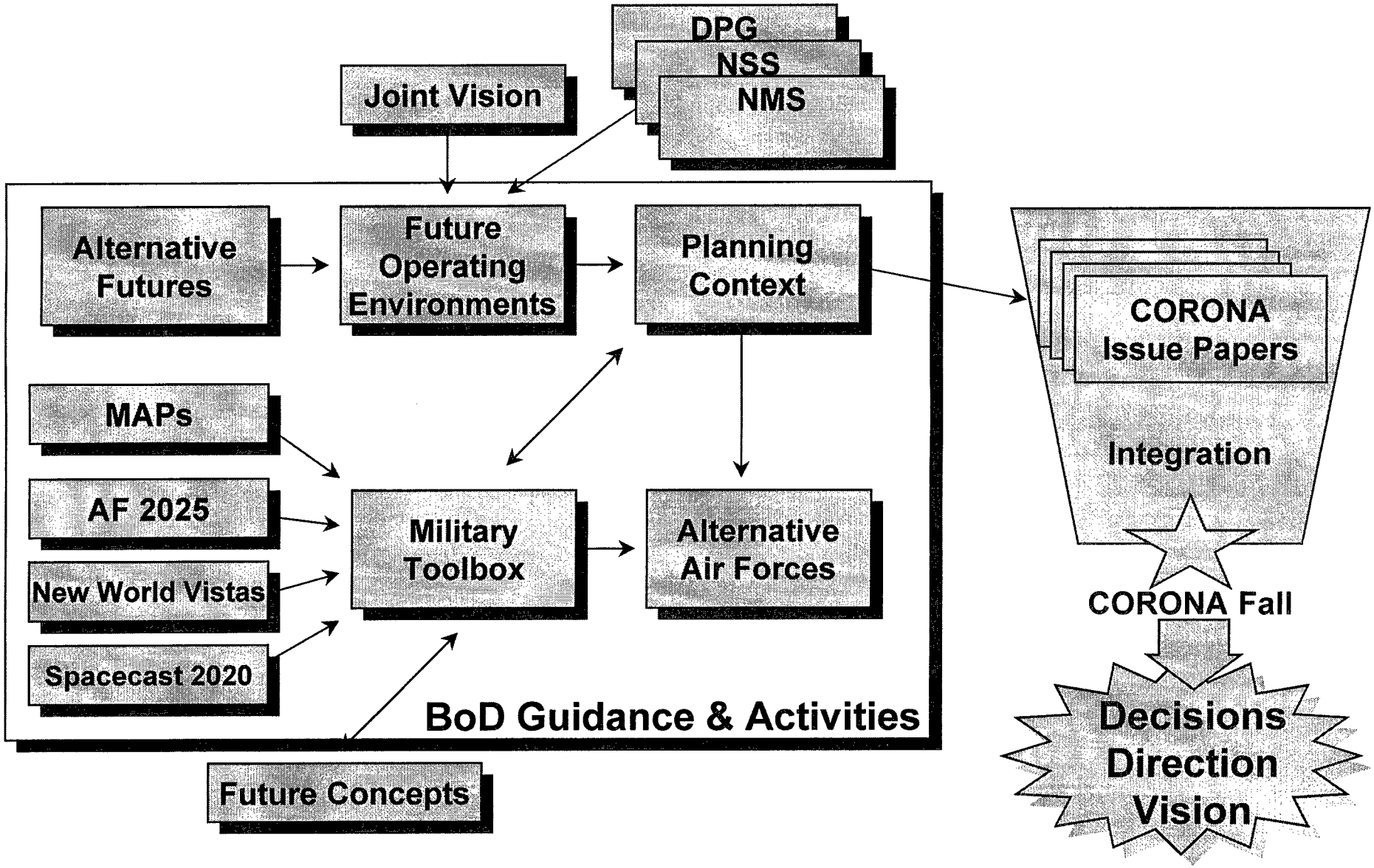


Briefing Outline



- Underlying Philosophy
- Building the Strategic Vision
- Implementing The Vision
- Path Ahead

Building the Strategic Vision



Generating Strategic Decisions

- CSAF created 3-Star Long-Range Planning Board of Directors in January 1996
  - Chaired by VCSAF; includes MAJCOM Vice Commanders and Air Staff 2-letters
  - Met almost monthly for full day from February to October
  - Reached consensus on key issues facing Air Force and identified menu of potential decisions
- CSAF set Fall CORONA agenda at June 1996 CORONA
  - NSC-type format for CORONA Issue Papers (CIPs)
    - Force options up, not recommendations
  - BoD panels managed preparation of CIPs
  - Corporately reviewed CIPs twice before CORONA

CORONA Fall '96

A historic CORONA (normally only two days long)

Purpose:

CORONA Issue Papers as Vehicles to determine Long Range Priorities

Build New Strategic Vision

30 Sep - 4 Oct	Mon 7 Oct	Tues 8 Oct	Wed 9 Oct	Thurs 10 Oct	Fri 11 Oct
CSAF Preparation		Long Range Issues	Long Range Issues	Long Range Decision Review	Long Range Decision Review
	Long Range Issues			Field Activity	CORONA ISSUES

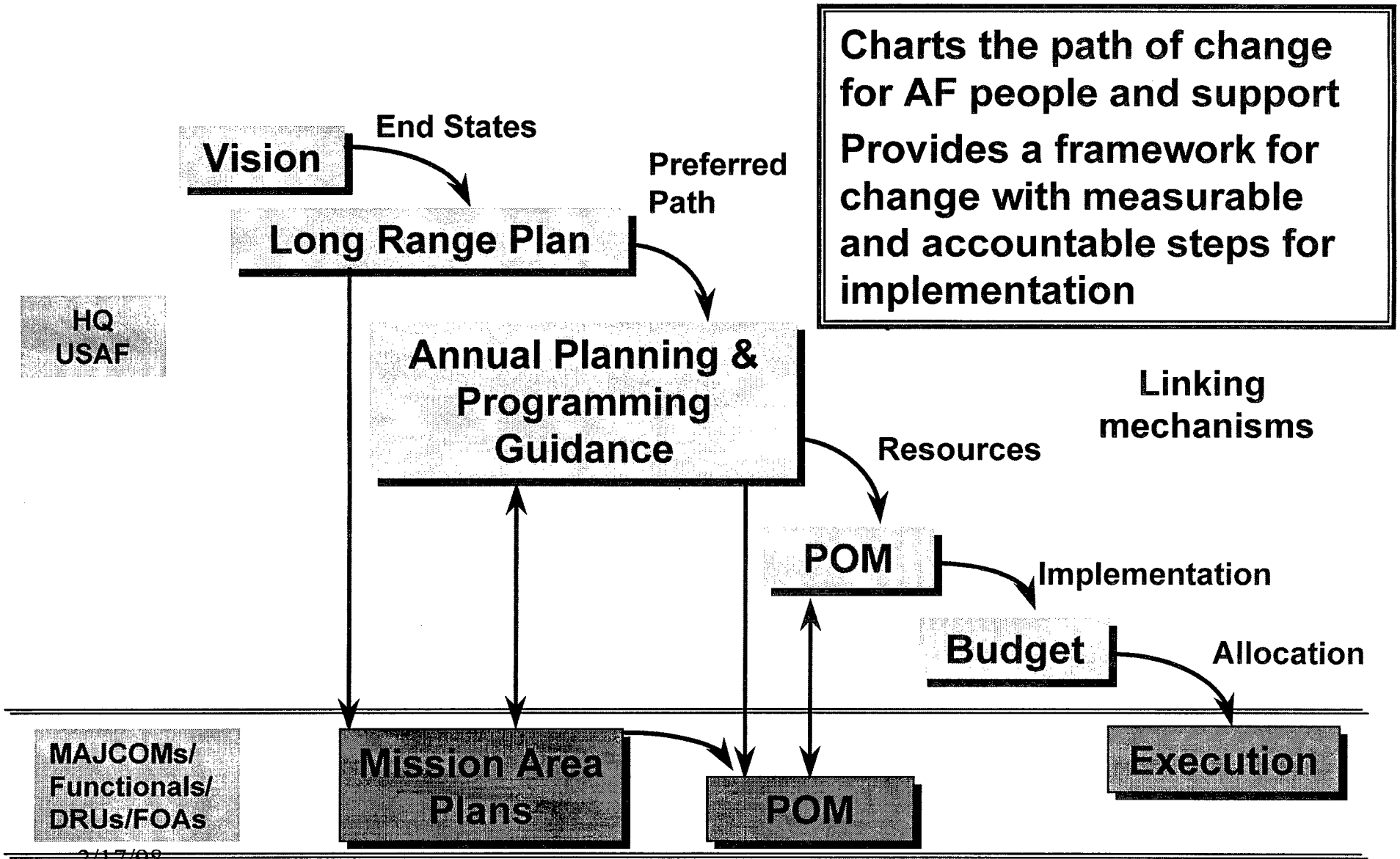
Briefing Outline

- Underlying Philosophy
- Building the Strategic Vision
- Implementing The Vision
- Path Ahead

First Big Steps During QDR

- CSAF: Long-Range Planning Process prepared Air Force intellectually for QDR; Consensus among leaders on where we want to go; Allowed us to implement the Vision during the QDR
- Greater efficiency to free up $'s for recapitalizing the Force
  - Protected Service Modernization Accounts
  - Aggressive O&P Program = force structure reduction -
  - 381,000 AC ⟶ 339,000 AC; only 700 for RC
- CSAF provided new rationale for F-22
  - "3+2" proposal for Air Superiority/Strike F-22 wings
  - 3 Air Superiority Wings planned - F-22 variants considered for follow-on to F-117As and F-15Es

Planning and Programming



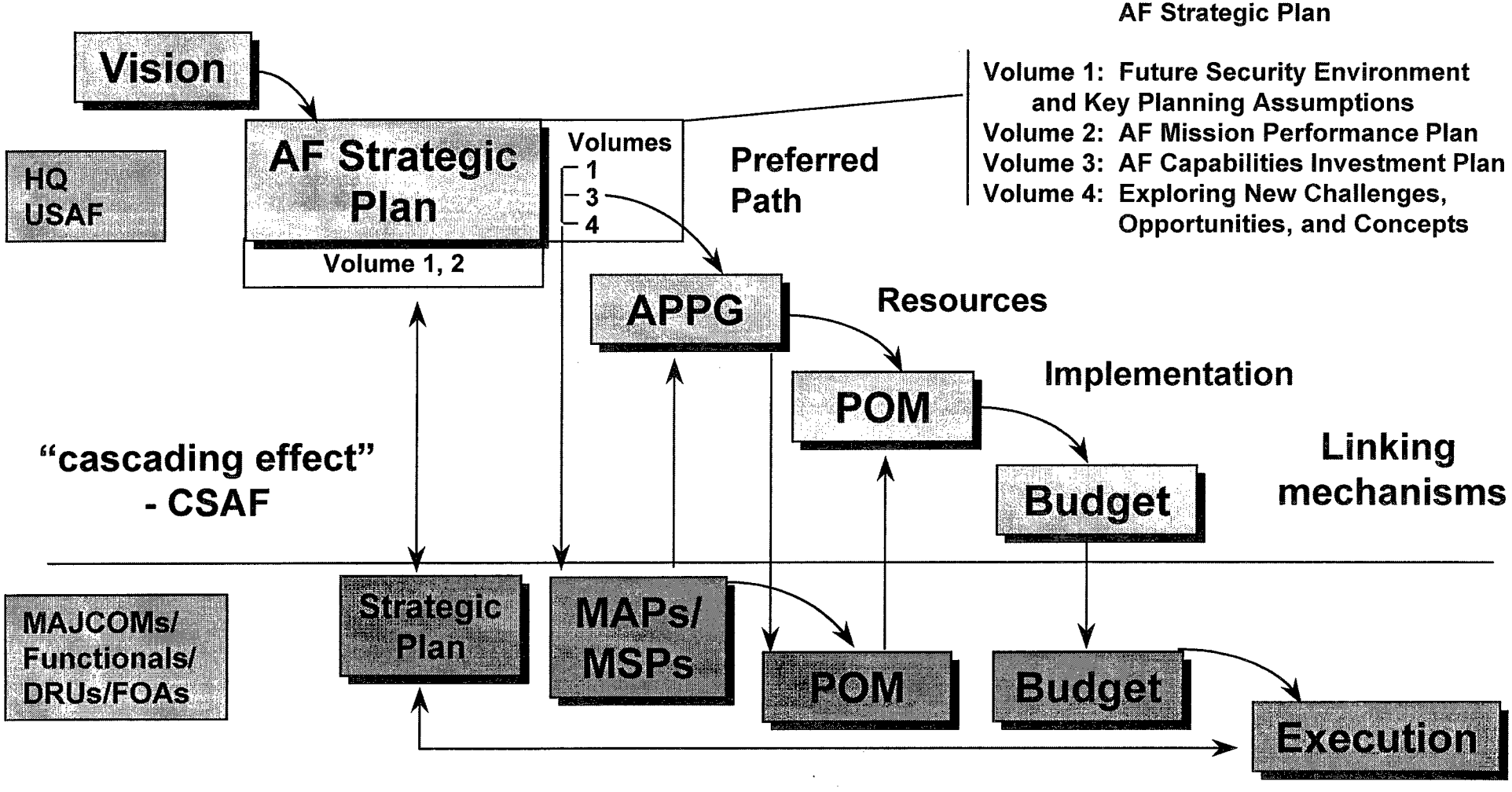
The Long-Range Plan

- CSAF wanted new Strategic Vision to be "actionable"
- 16 Decisions at CORONA converted to 16 Directive Statements
  - Initial Actions: OPRs, Actions, Dates
  - Transition Points: Decision Point or Contributing Capability
  - End-State: Complete Capability achieved
- 42 End-State statements provide a fairly precise statement of corporate strategic intent

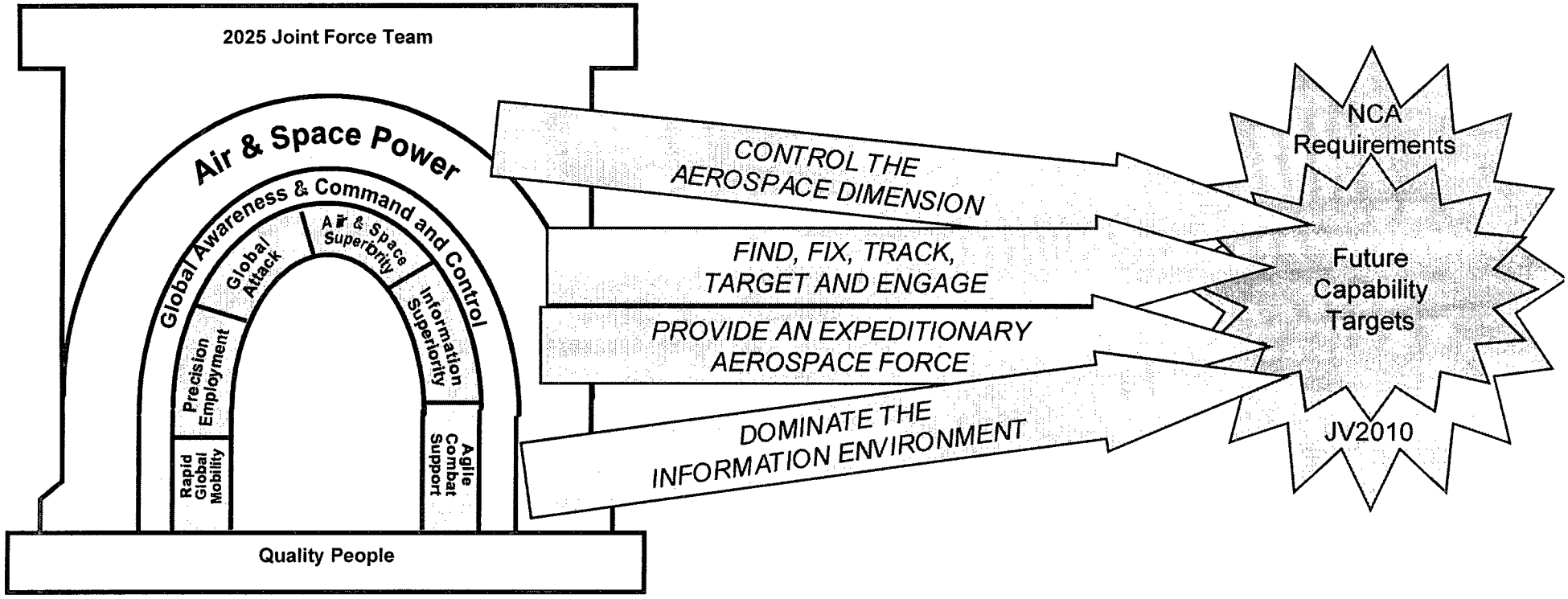
Briefing Outline

- Underlying Philosophy
- Building the Strategic Vision
- Implementing The Vision
- Path Ahead

Air Force
Strategic Planning Process

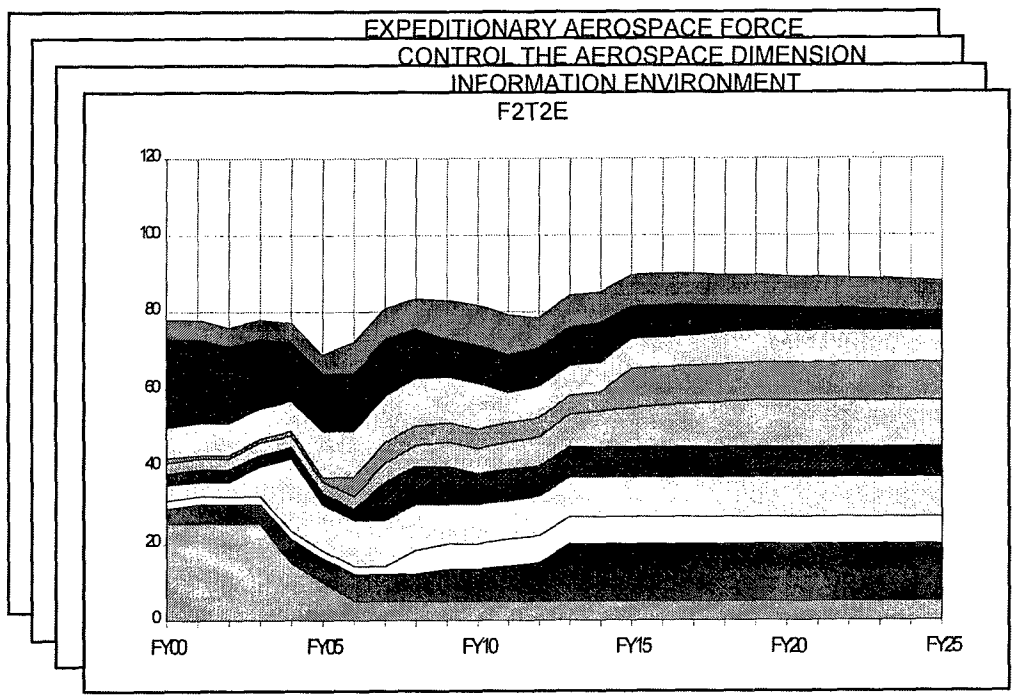


Focusing Core Competencies on Building Critical Future Capabilities



Thrust Areas provide a means to focus within and across core competencies to achieve highest priority future capabilities for the joint warfighter.

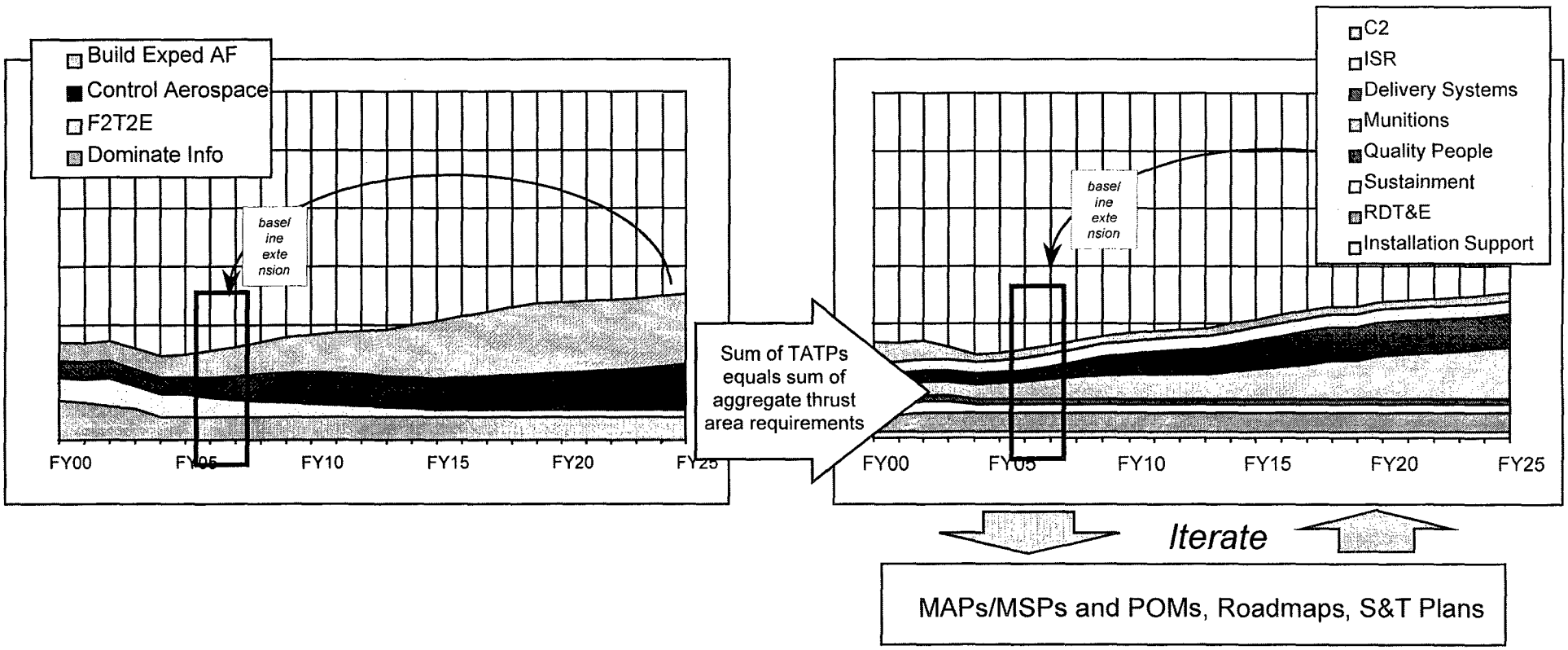
Integrating Thrust Area Transformation Plans



IPTs create separate Thrust Area Transformation Plans

- Just as functional requirements are integrated to achieve a Thrust Area Transformation Plan(TATPs), the TATPs must then be integrated.
  - Also requires a *corporate* process -- use the Air Force Group
- Results in prioritization and phasing of Thrust Areas to achieve capability targets.
- Will also drive the pace at which the Air Force migrates capabilities into space

Supporting Resource Allocation



- Aggregate thrust area requirements identify what is needed to achieve future capability targets.
- Allows Air Force Corporate Structure, planners and programmers to balance near-term and long-term requirements.

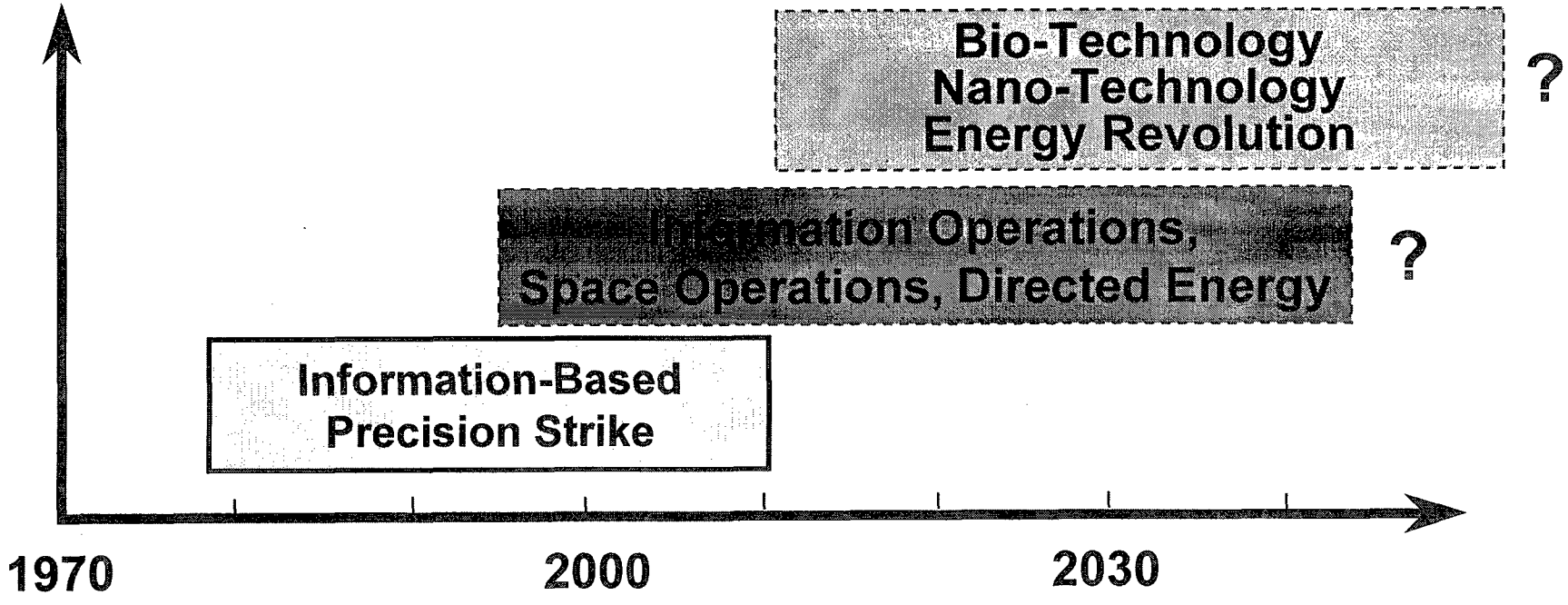
Concluding Remarks

- Air Force implementing its new strategic vision
  - Revalidated our core competencies and strengthening them with relevant capabilities
  - Set a course designed to meet the needs of the future joint team
  - New structure for planning at senior and staff levels
- Goal: Changing to ensure that the 21st Century Air Force remains relevant to the nation's needs

Back-Up Slides

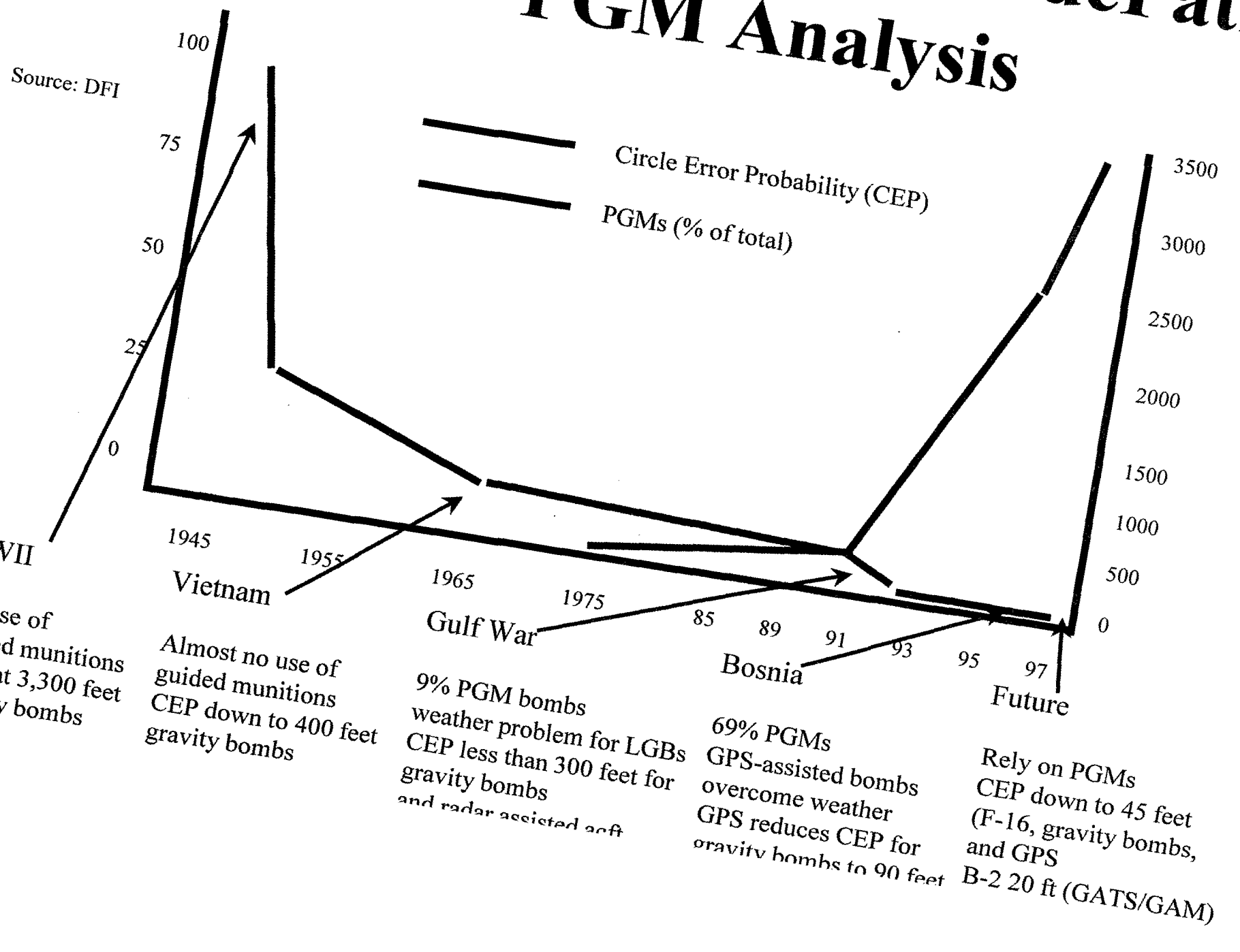
Implementing the RMA

- NOT ONE BUT SEVERAL RMAs



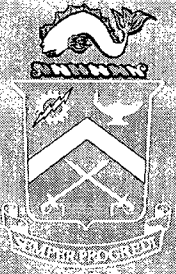
Air Force on RMA GlidePath: PGM Analysis

Source: DFI

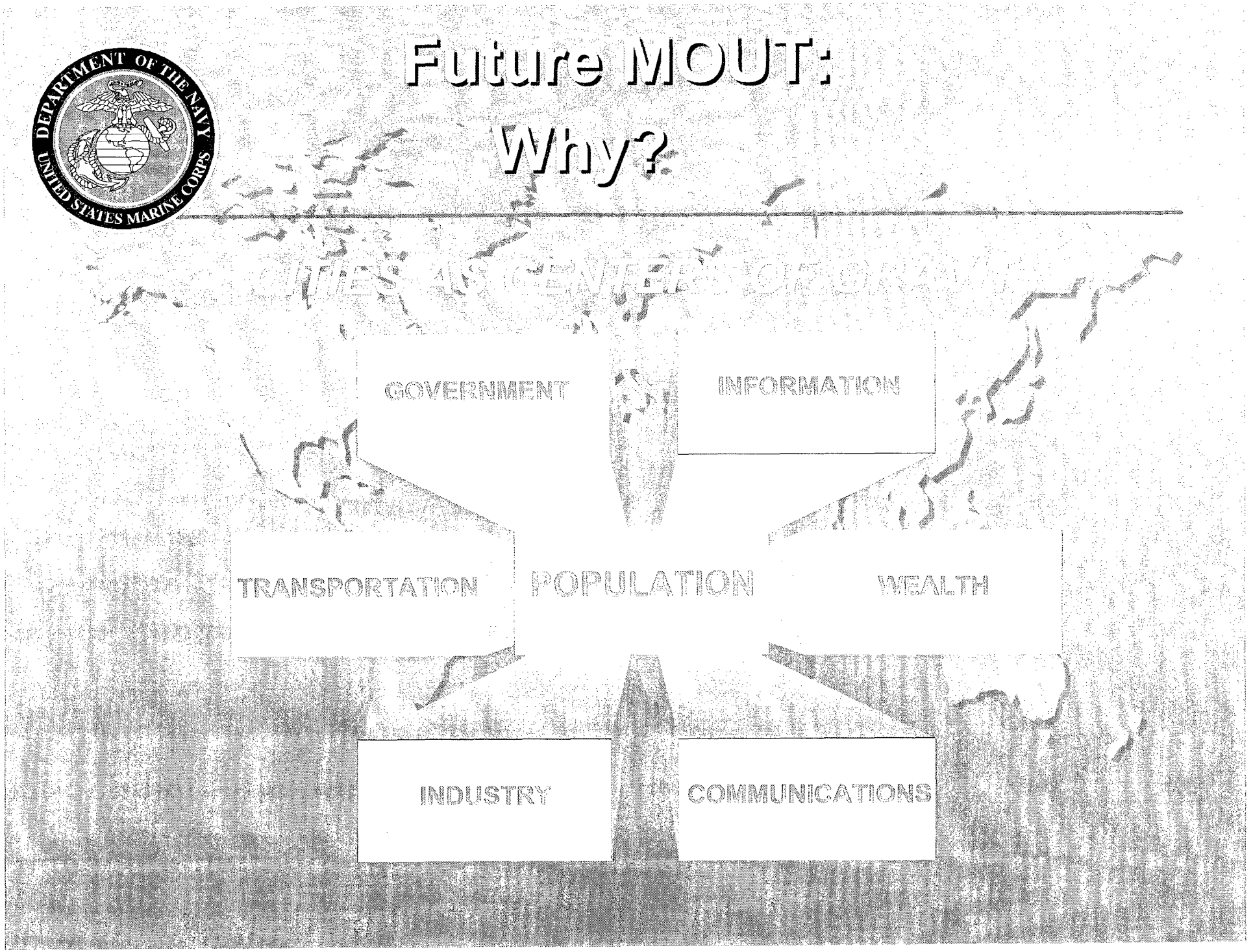


A Concept for Future MOUT

Concepts Division



Future MOUT:
Why?



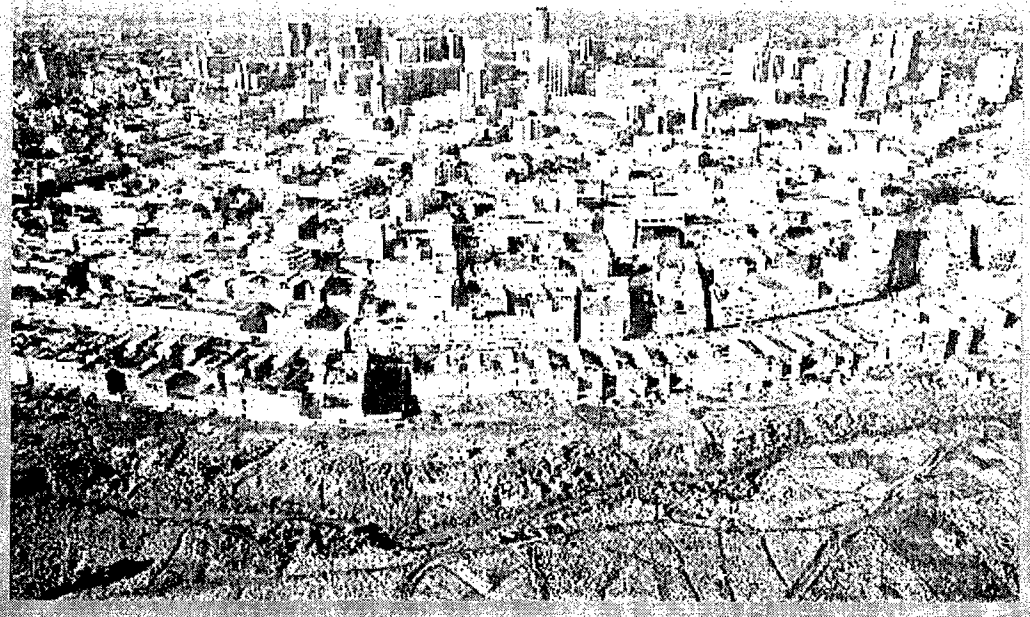
Future MOUT:
Why?

. . . because we will DRIVE the enemy into the cities

COVER

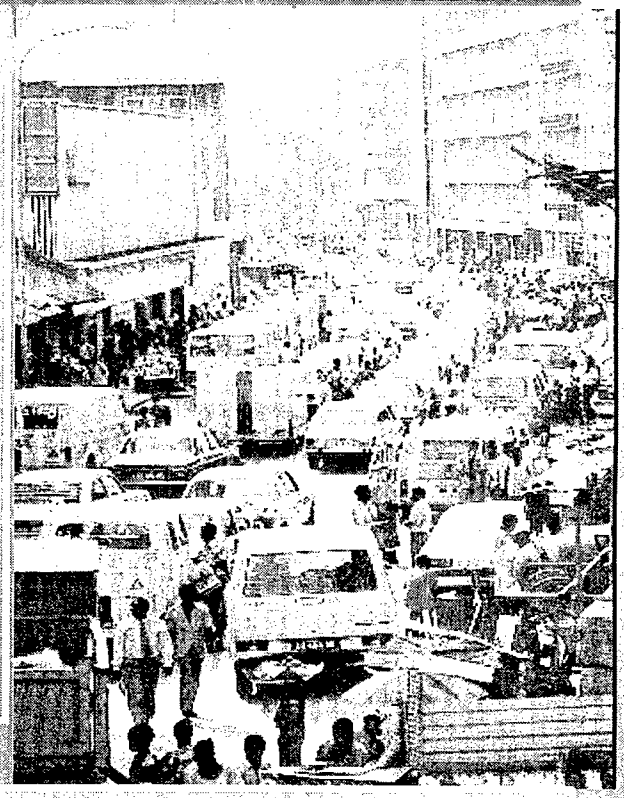
CONCEALMENT

NONCOMBATANTS



Adaptive opponents will seek to neutralize perceived U.S. technological advantages through asymmetrical tactics

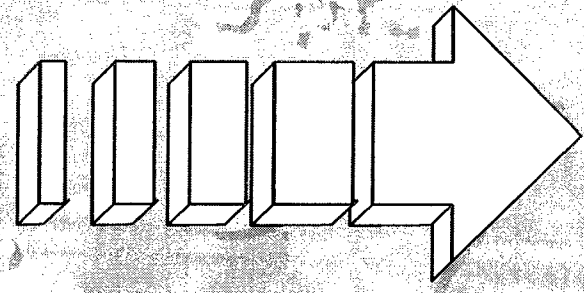
Future MOUT: Urbanization



Future MOUT:
The Challenge

MOUT Today

ATTRITION WARFARE



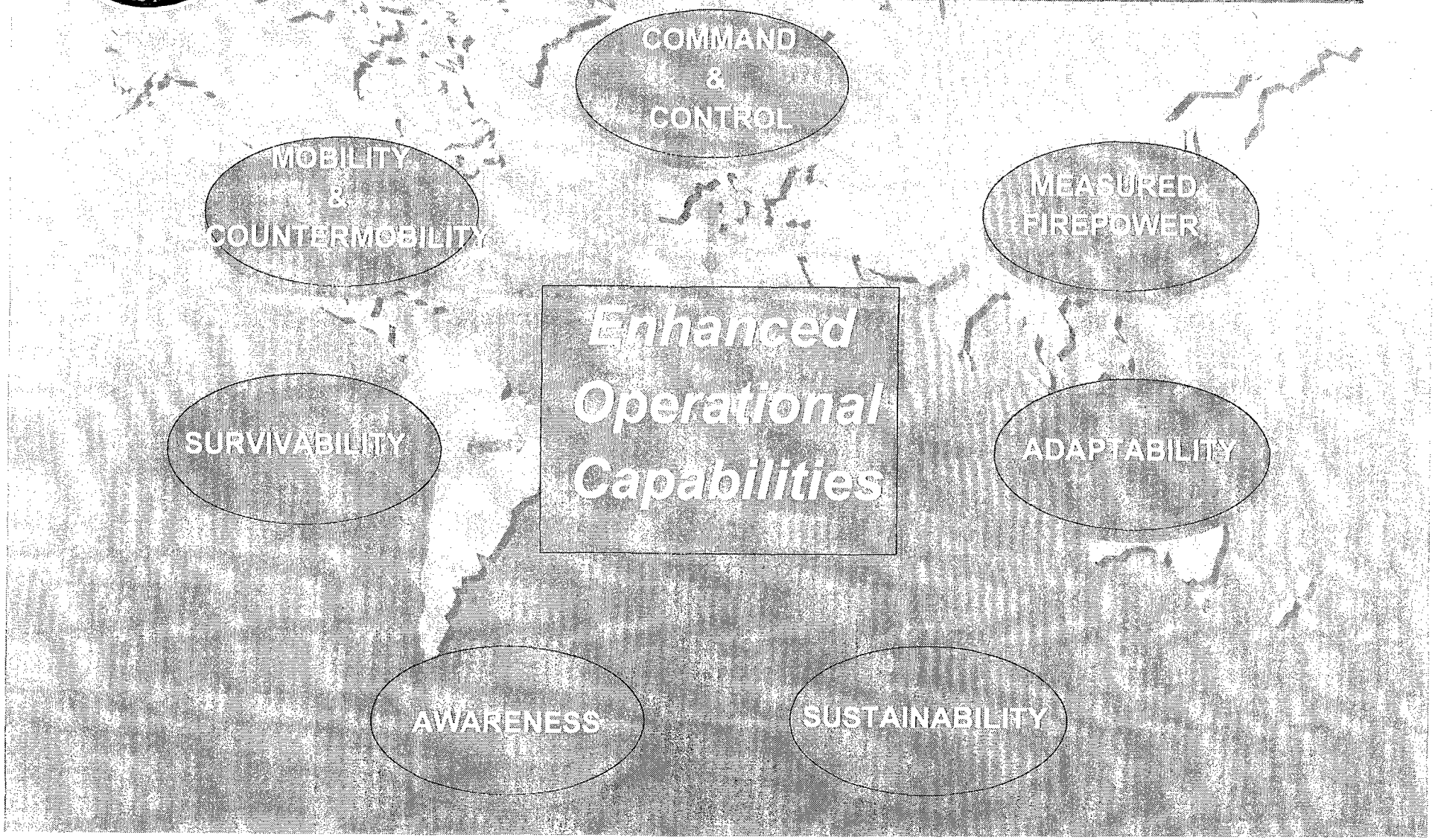
MANEUVER WARFARE

Urban terrain limits

- Command & control
- Observation distance
- Engagement ranges
- Weapons effects
- Mobility

. . . across the range of military operations.

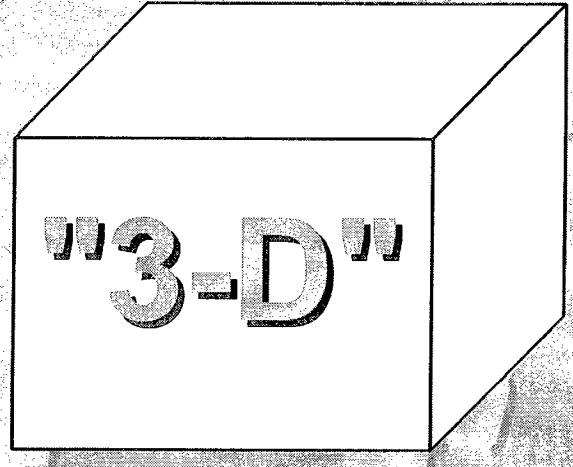
Future MOUT: The Vision



Command and Control

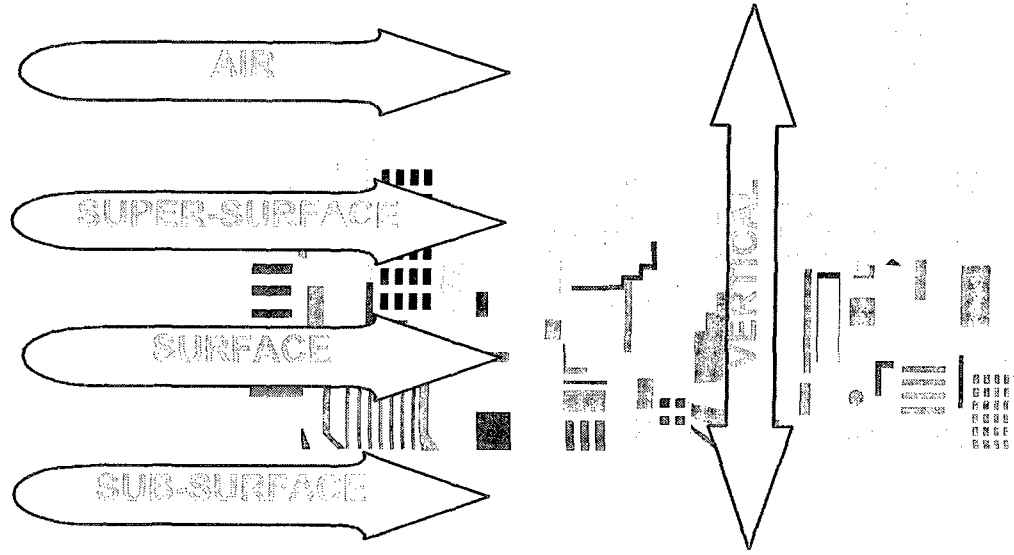
COMM DEVICES

MAP PRODUCTS



PLANNING SYSTEMS

Mobility/Countermobility



- INTERIOR & EXTERIOR VERTICAL MOVEMENT
- RAPID HORIZONTAL & VERTICAL BREACHING
- "3-D" PRECISE NAVIGATION
- DENY ENEMY EXPLOITATION OF TERRAIN

Measured Firepower

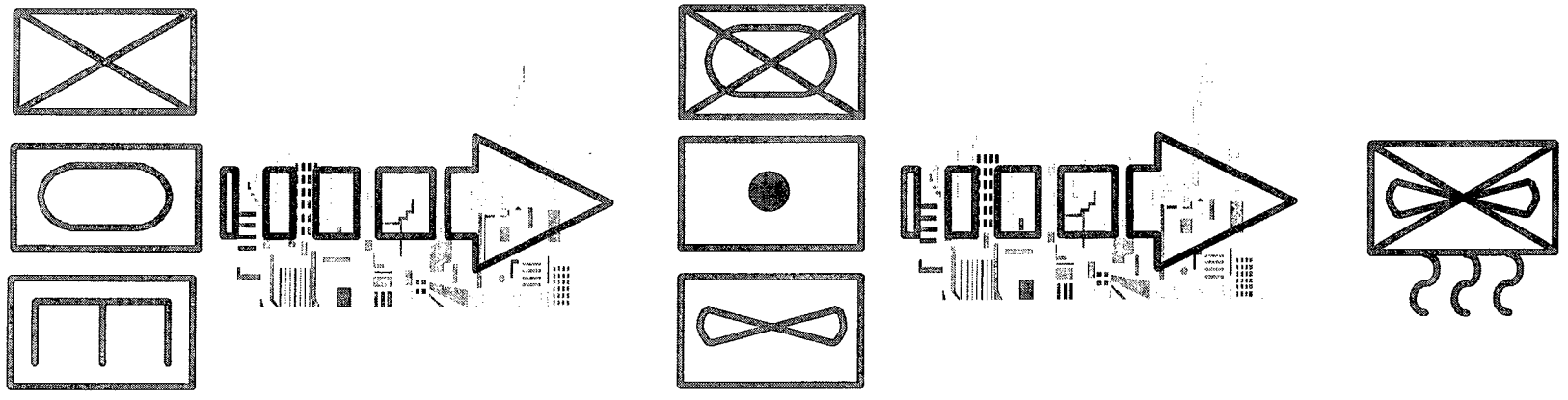
- "3-D" target location & designation
- Extremely precise ordnance delivery
  - Super-surface
  - Surface
  - Sub-surface
- Munitions with variable effects
  - Penetration
  - Explosive
  - Fragmentation
- Nonlethal weapons

Survivability

Individual and collective protection:

- *Body armor optimized for close-range engagement*
- *Concealment*
  - Urban camouflage
  - Signature reduction (mechanical and biological)
- *Enhanced top armor for vehicles*
- *Casualty handling in "3-D"*
- *Protection from exposure to diseases prevalent in urban environments*

Adaptability



Enhanced ability to create task organized combat formations:

- SMOOTH TRANSITION FROM ONE TASK ORGANIZATION AND MOTION TO ANOTHER
- INDEPENDENT OPS BY VERY SMALL UNITS EMPLOYING SPECIAL CAPABILITIES (SQUAD AND PLATOON MINI-TASK FORCES)

. . without losing momentum.

Awareness

Sensing the 3-D battlespace to accurately assess information regarding the terrain and the presence of friendly, enemy, and noncombatant personnel:

- "Sense through walls"
- 3-D interior rendering, with capability to display, store and exchange information electronically
- Remote interior sensing

Sustainability

Overcoming the logistics challenge of the urban battlespace:

- CSS must reach dispersed units in complex, 3-D terrain
- Marines will exploit the urban environment
  - Hospitals
  - Vehicle maintenance facilities
  - Communications systems
  - Supplies
  - Talent

Future MOUT: Requirements

- ***Doctrine*** - Change the way we think about MOUT (maneuver, vice attrition).
- ***Organization*** - Do we need special units?
- ***Training/Education*** - More sophisticated MOUT facilities? Train in U.S. cities?
- ***Equipment*** - Leverage emerging technologies in sensing, navigation, comm, etc.
- ***Support*** - Maintenance of sophisticated equipment and training facilities.

Urban Warrior

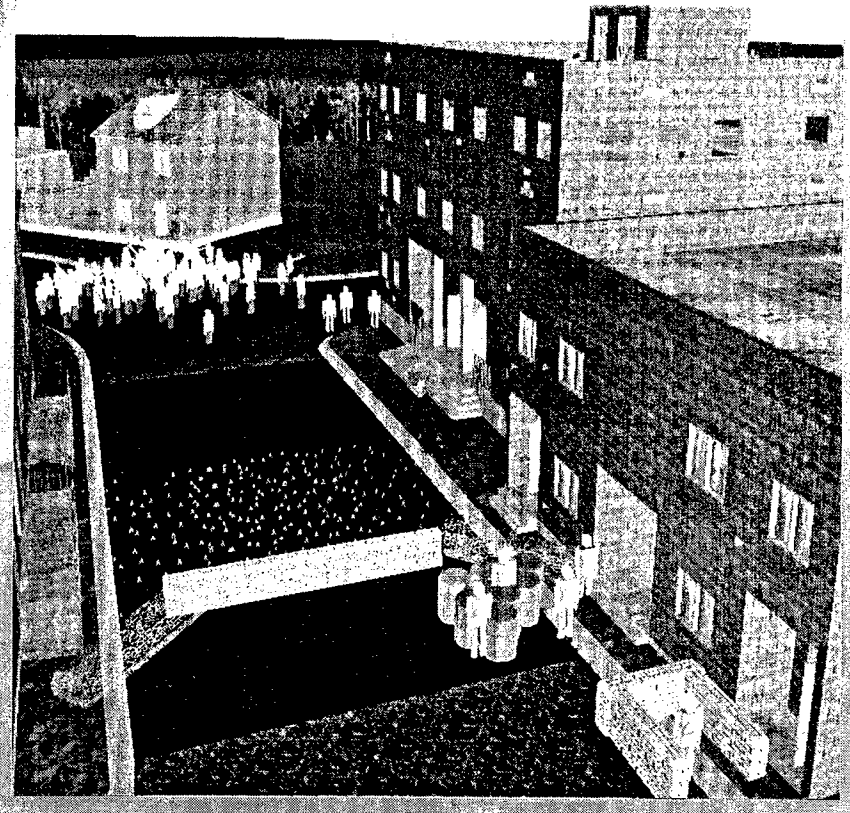
Fall 1997
to
Fall 1998

Phase One: East Coast

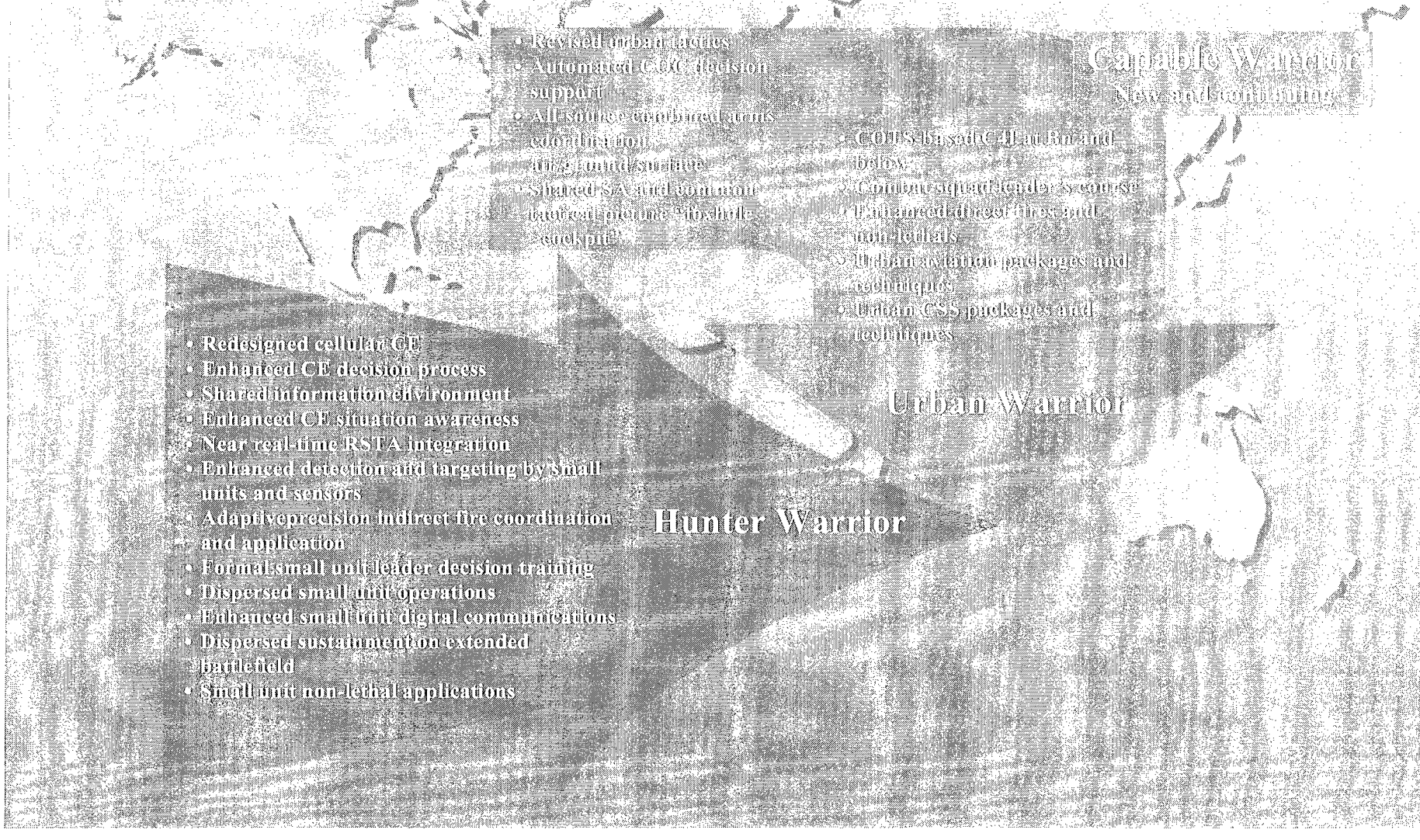
- Experiment with refined EFOG
- Apply advanced TTPs
- Seabased urban operations
- LOEs culminating in AWE

Framing Urban Operations

- Initiative and opportunism at all levels, especially small unit



Warrior Experiment Themes



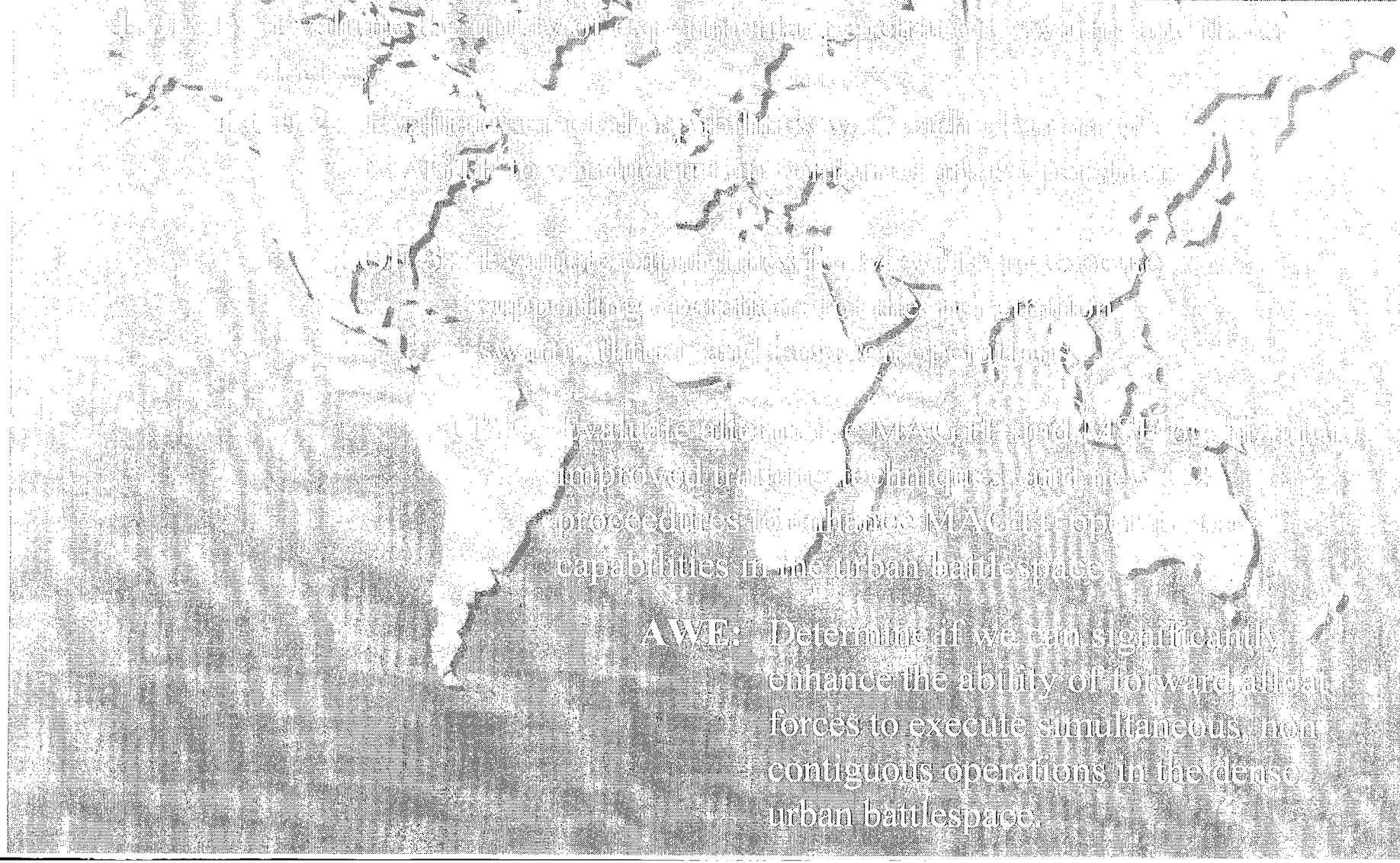
Urban Warrior Hypothesis



Urban Warrior Hypothesis (cont)

- [illegible]
- [illegible]
- [illegible]

Experimental Progression



AWE: Determine if we can significantly enhance the ability of forward afloat forces to execute simultaneous, non-contiguous operations in the dense urban battlespace.

USSOCOM ACQUISITION

SOF MODERNIZATION PRIORITIES

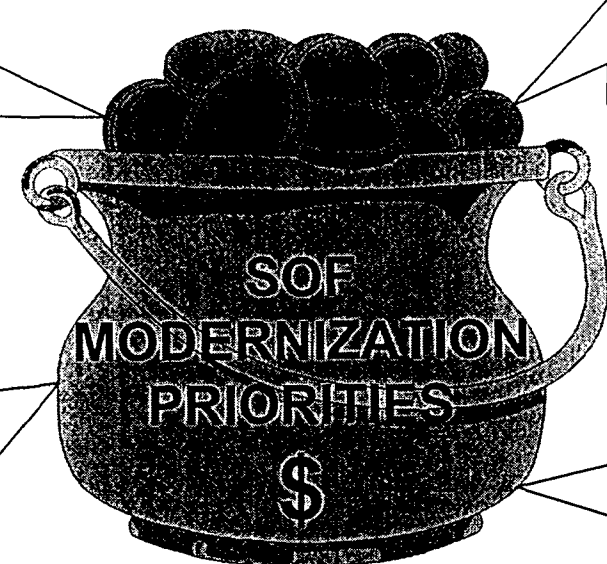


COL DELLOYD VOORHEES, JR
MILITARY DEPUTY TO USSOCOM
ACQUISITION EXECUTIVE
18 FEB 1998

EXTERNAL GUIDANCE INFLUENCES

NATIONAL MILITARY STRATEGY
- SHAPE
- RESPOND
- PREPARE

JOINT VISION 2010
- DOMINANT MANEUVER
- PRECISION ENGAGEMENT
- FULL DIMENSION PROTECTION
- FOCUSED LOGISTICS



QDR/NDP
- POWER PROJECTION
- INFORMATION OPERATIONS
- SPACE
- URBAN OPERATIONS
- WMD
- TRANSNATIONAL THREATS

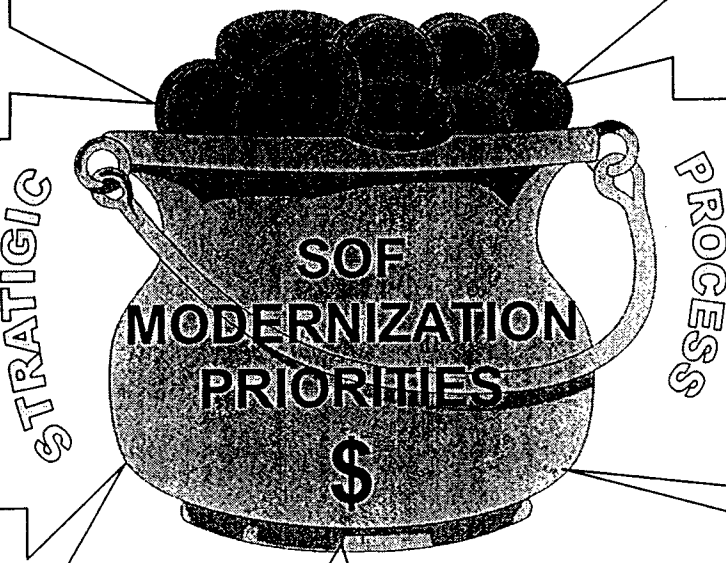
BALANCED BUDGET INITIATIVE
- FISCAL GUIDANCE

DEFENSE REFORM INITIATIVE
- RE-ENGINEER
- CONSOLIDATE
- COMPETE
- ELIMINATE

INTERNAL GUIDANCE INFLUENCES

POM 00-05
- ACCEPT RISK
- SEEK EFFICIENCIES
- ESTABLISH CONDITIONS FOR FUTURE SUCCESS

SOF VISION 2020
- QUALITY PEOPLE
- BROAD-BASED TECHNOLOGICAL EDGE



NEAR TERM MODERNIZATION
- ASDS
- CV-22
- COMBATANT CRAFT
- C4I

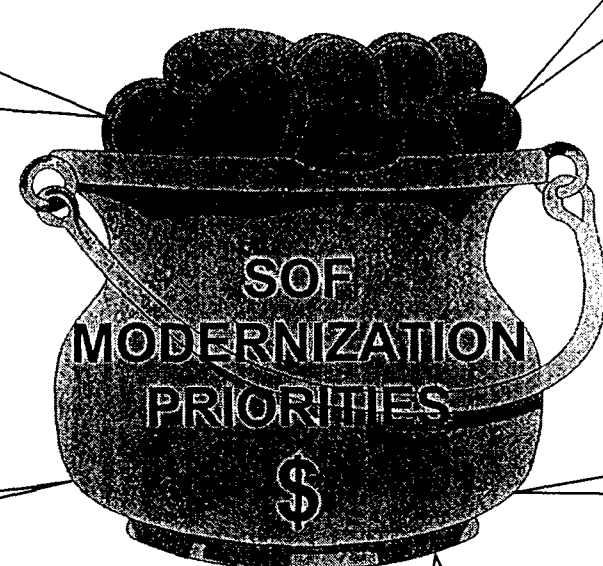
PLATFORM READINESS

OPTEMPO

SOME FISCAL REALITY DECISIONS

CP/WMD MISSION GROWTH

MH-53-J/CV-22 TRANSITION



ASDS COSTS

RELIABILITY, MAINTAINABILITY AND SUSTAINABILITY COSTS

OUTSOURCING

SELLING TO USSOCOM

TECHNICAL INDUSTRIAL LIAISON OFFICER (TILO)

- MR SCOTT BOWLES (813) 828-9482
  bowlesrs@soac.hqsocom.mil

ADVANCED PLANNING BRIEFING TO INDUSTRY

- 12-14 MAY 1998
- TAMPA CONVENTION CENTER

USSOCOM SOAC WEB PAGE

www.soac.hqsocom.mil

UNITED STATES
SPECIAL OPERATIONS COMMAND



SOF TECHNOLOGY

Future Directions

Mr. Frank Wattenbarger

EYES WIDE OPEN
21st CENTURY SOF

- EMBRACE AND INSTITUTIONALIZE THE PROCESS OF CHANGE ... ONLY CORE VALUES PERMANENT
- **LEVERAGE TECHNOLOGY TO ENHANCE HUMAN DIMENSION**
- TRAIN FOR CERTAINTY, EDUCATE FOR UNCERTAINTY
- CONDUCT STRATEGIC OPERATIONS IN TACTICAL ENVIRONMENTS
- PROVIDE U.S. WITH ...
  - ECONOMY OF FORCE
  - EXPANDED OPTIONS
  - "TAILOR TO TASK" CAPABILITIES



FULL SPEC

Flagship Capabilities

A Technology Persective

- Strategic Agility
- Flexible White, Gray, Black Mobility
- Ubiquitous Presence
- Regional Expertise (Language, Culture, etc)
- Information Dominance/Situational Awareness
- Continuous Secure Connectivity and Reachback
- Self-Sufficiency in Austere Environment
- Full Spectrum Integrated Operations

Areas of Highest Interest

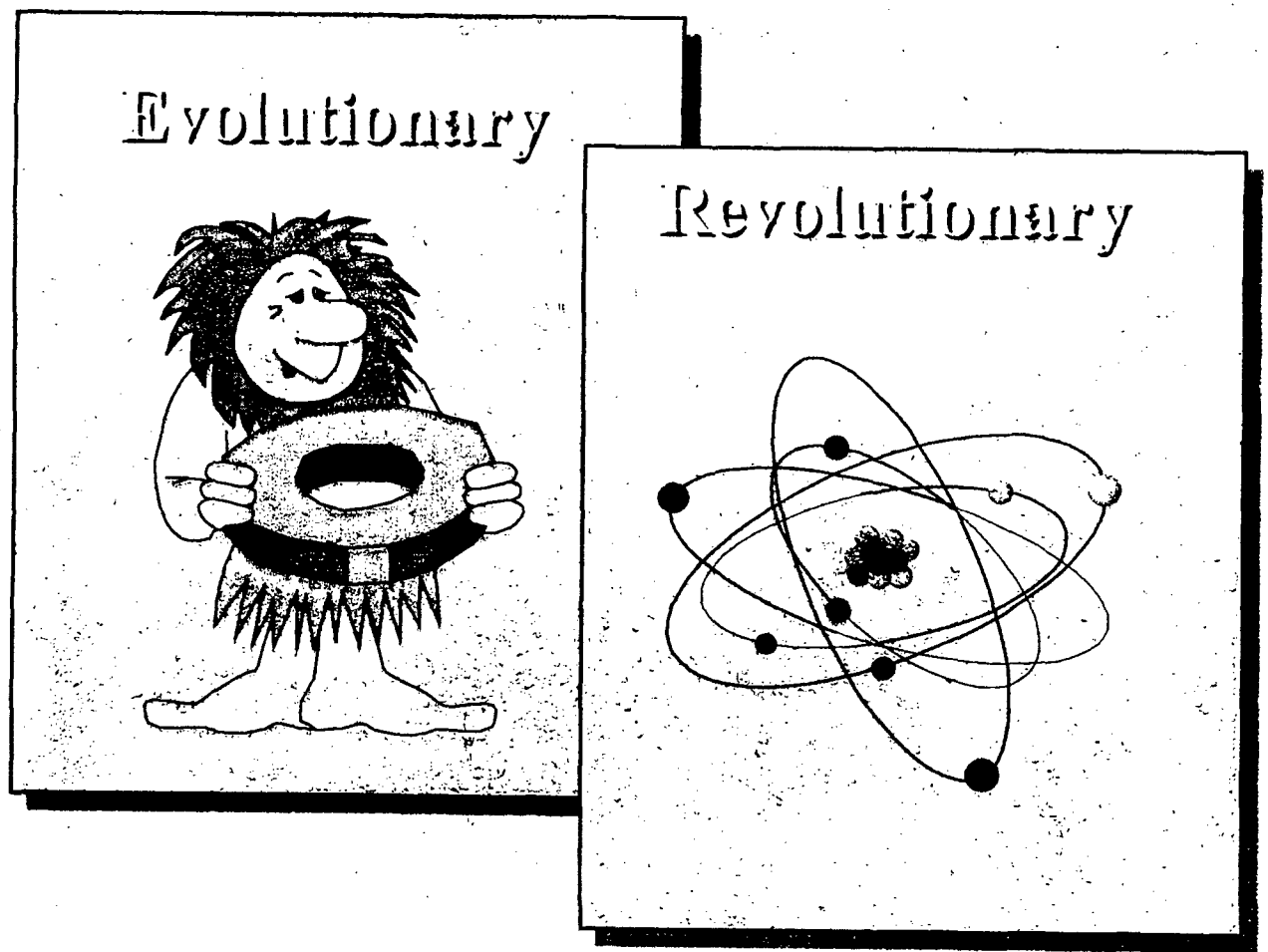
- Low observable/masking technologies
- Smarter weapons
- Long-range precision capability
- Information technologies
- Special Reconnaisance

USSOCOM TECHNOLOGY VISION

We will continue to identify and
that have the potential to satisfy future SOF requirements, maintain our core competencies, and meet emerging SOF missions. We will continue to be a
We will expand our initiative to
within the DOD agencies, Services, national laboratories.

SPECIAL OPERATIONS ACQUISITION AND LOGISTICS

A More Proactive Approach



Leap-Ahead technologies, vice evolutionary improvements

ADVANCED CONCEPTS AND ENGINEERING

A More Proactive Approach

- Increased long-range technology planning
- Participation in DOD S&T Planning
  - Sponsor of several DTOs / Interested in many
- Coupled with other programs
  - TSWG
  - CPSP

How to Get to Us

- Solicitations such as BAAs
  - www.soac.hqsocom.mil
- SBIR
- Similar Programs

We are very interested in your ideas especially "Leap-Ahead" Technologies

Flexible Approaches to Meet the Needs of SOF for the 21st Century

NDIA SO/LIC Symposium
February 18, 1998

Robert C. Doheny
Director for Acquisition
Office of the Assistant Secretary of Defense for
Special Operations and Low-Intensity Conflict

The Future

- Complex challenges
  - SOF will be relied on to meet these challenges
- Tight fiscal constraints
- Modernization will be essential
  - Upgrade or replace current capabilities
  - New technologies to meet new challenges
  - Need "leap-ahead" capability to implement SOF vision

The Problem: How to Modernize?

SOF Acquisition Strengths

- CINC Special Operations Command
- USSOCOM Acquisition Authority
  - Special Operations Acquisition Executive
  - Special Operations Acquisition and Logistics Center
- SOF Funding
  - Limited funds, but under USSOCOM control
- SOF mission is *now*
  - Urgency, importance
- SOF is a small/flexible force
- Industry wants to work with SOF

Modernization

- To achieve modernization objectives must capitalize on SOF acquisition strengths and:
  - Take a hard look at all systems and programs
  - Create innovative ways to meet SOF's needs

Examine All Systems & Programs

- Look at the current inventory
  - Keep? Maintain & sustain? Should we upgrade?
- Look at what is in development today
  - When fielded, will it give our Special Operators a *significantly* improved capability? Do we need it?
  - If not, pull out & reinvest funds
- Look at what is needed for the future
  - Must conduct rigorous analytical assessment
  - Determine the extent of the value added

Analytical Assessment Capability

- To support review, need robust analytical assessment capability
- Provide support to Assessment Directors and Acquisition & Logistics Center
- Serve as adjunct to Strategic Planning Process
- Able to look at current systems as well as future concepts

Innovative Approaches to Support Modernization

- Future Concepts Working Group
- Leverage other DoD & non-DoD programs
- Use flexible Battle Labs
- Increase use of flexible contracting approaches
  - "Other Transactions"

Future Concepts Working Group

- To institutionalize change & advancement for the SOF warfighter
  - Harmonize implementation plan - focus efforts
  - Technology coordination
  - Gatherer of new concepts from all sources
  - Leverage industry

Expand Leverage of Other Government Programs

- Technical Support Working Group
  - Enhanced Night Vision Goggles
  - PBO Body Armor
- Defense Advanced Research Projects Agency
  - Tactical Personal Computer
- Department of Energy National Labs
- Others

Flexible Battle Labs

- Integrated Government-Industry team
  - Quickly established, quickly disbanded
- Formed to attack specific operational concept
- "Industry" = Companies, Universities, other non-Government groups
- Product -- Solution to problem and possibly initial prototypes
- Example: ElectroOptical Countermeasures

Flexible Contracting

"Other Transactions"

- Developed and championed by DARPA
  - Now available for all-DoD use
- Other Transactions (for prototypes)
  - Highly flexible contracting approach
    - Standard rules (FAR, TINA, etc) don't apply
  - Supports Government/Industry teaming
  - Emulates best commercial practices
  - Encourages commercial vendors who would otherwise not deal with DoD's bureaucracy

When to Use Other Transactions?

- Use when industry wants to be involved to develop a technology, or
- Technology has military & commercial application, or
- When Government wants to leverage industry's knowledge and resources, or
- When industry does not want to do things the typical Government way

Benefits from Other Transactions

- Gives access to more commercial technology
  - More attractive to "non-DoD" commercial firms
- Can better leverage commercial investment
  - Industry supports this type of effort to help them develop a commercial product
- Help transition technology to actual use
- Can quickly develop prototypes
  - Can rapidly provide interim operational capability

Current Examples
from DARPA

- Global Hawk & Dark Star Unmanned Aerial Vehicles
- Autonomous Landing Guidance
  - Display and sensor system to allow pilots to land safely in low visibility conditions without ground radar
  - Consortium of commercial air lines, commercial avionics companies, and the military
    - Air Mobility Command and Air Force Special Operations Command

Potential Examples

Light Strike Vehicle

- USSOCOM/USMC Light Strike Vehicle
  - Ground vehicle to fit inside of the CV/MV-22
  - Continually "below-the-line" for development funds
- Interest from non-typical DoD industry
  - Baja racers, Off-road vehicle companies
- Potential commercial market
- Investment sharing for development
- Initial prototypes used by SOF for trials & early operational use
- Transition to "normal" production program to meet USMC and full USSOCOM need

Potential Examples

Counterproliferation Equipment

- Various equipment to support CP mission
- Non-typical DoD products, similar to needs met my private industry
  - Requires "non-DoD" industry partners
- Possible Military/State/Local Government use
  - Broad market & high interest makes commercial investment attractive to private industry

Summary

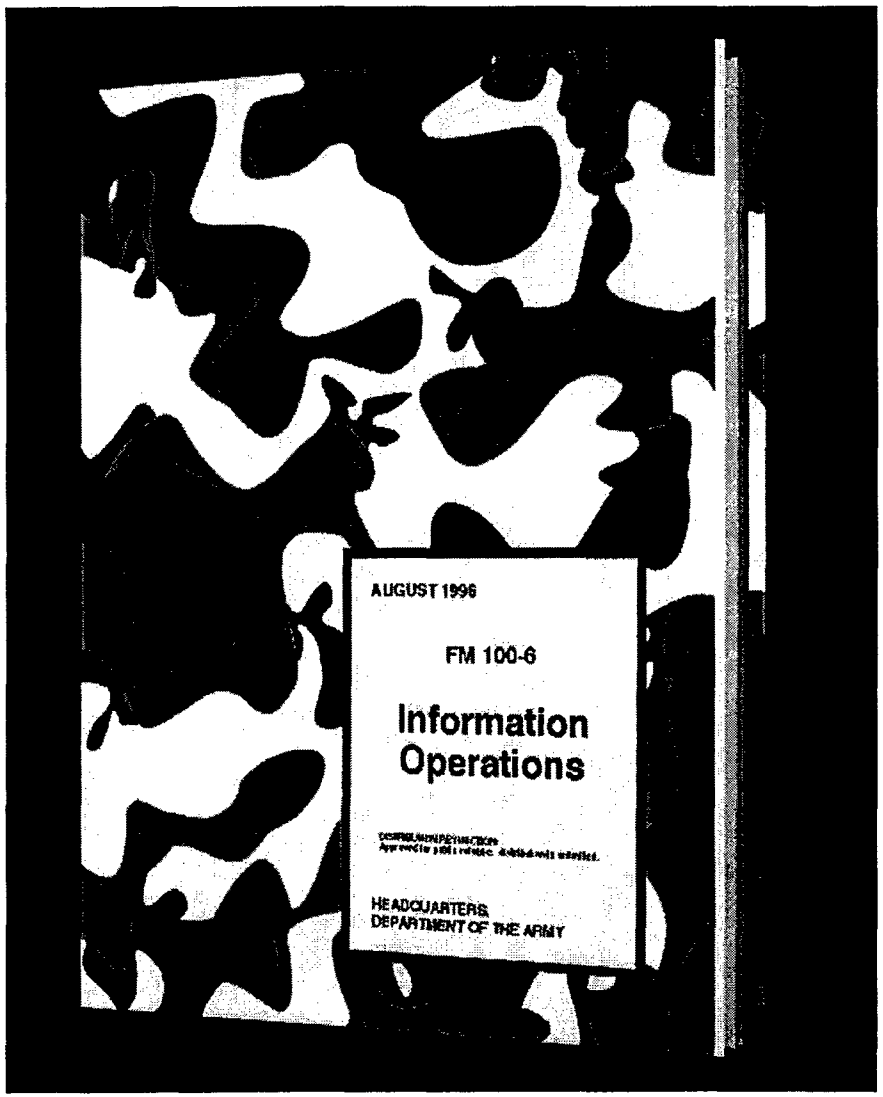
- SOF will remain the "force of choice"
- Must modernize for success
- Modernization with limited funds requires innovation
- Rigorous analytical review needed of current and planned systems
- Innovative methods such as flexible Battle Labs and Other Transaction development efforts can help SOF modernize for the 21st century

Army Information Operations (IO) Implementation

Colonel Brian E. Fredericks

HQDA, Deputy Chief of Staff
for Operations and Plans (DAMO-ODI)

IO DOCTRINE

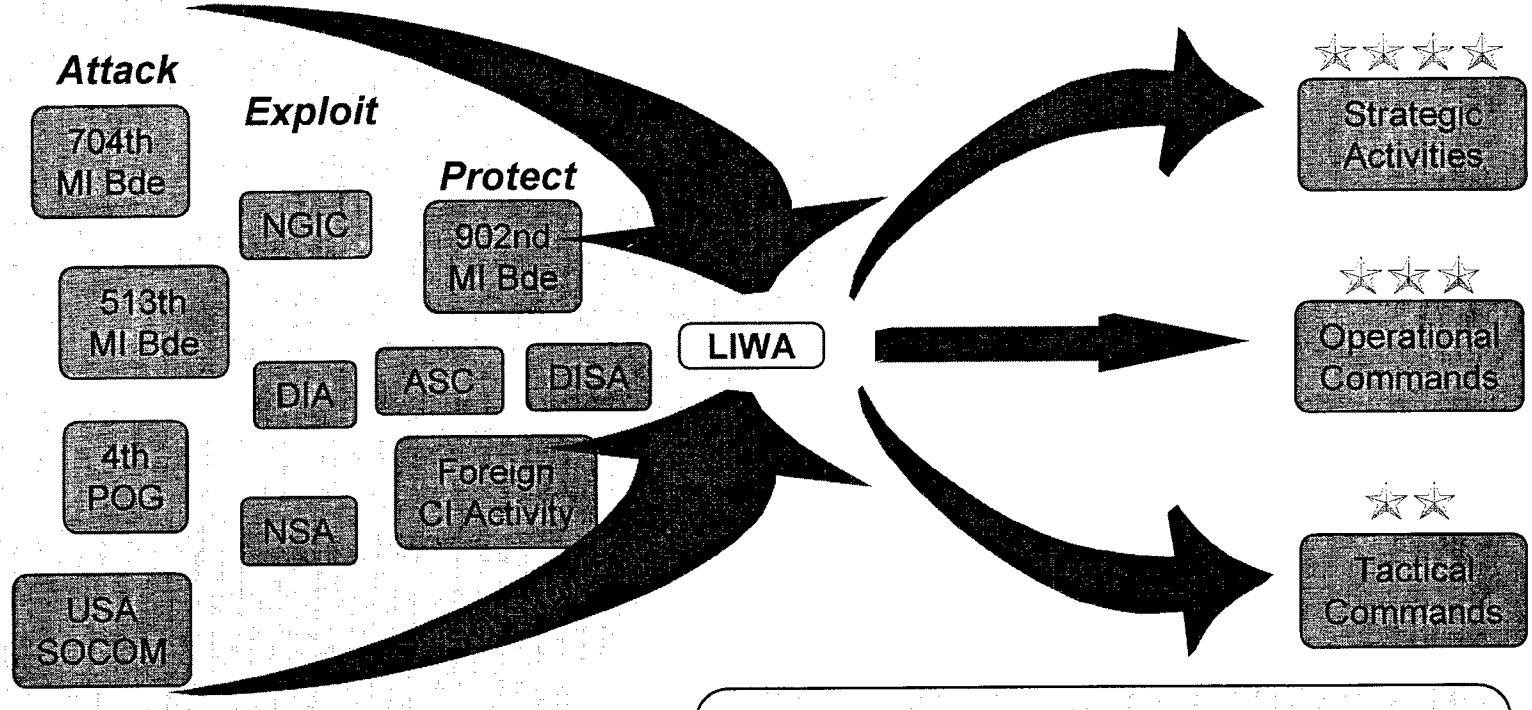

AUGUST 1996
FM 100-6
Information Operations
HEADQUARTERS
DEPARTMENT OF THE ARMY

Chief of Staff of the Army's Information Operations Intent Statement

"VICTORY THROUGH INFORMATION DOMINANCE." Operations in the 21st Century will be heavily based on knowledge derived from relevant information and intelligence (RII) collected, processed, analyzed and disseminated over a complex global system of systems. This evolving military information environment will fundamentally change the way we, the Army, conduct operations in peace and in conflict. Information Operations (IO) includes all measures, both offensive and defensive, taken to achieve knowledge dominance. The Army will integrate IO into every aspect of Army XXI.

3 September 1996

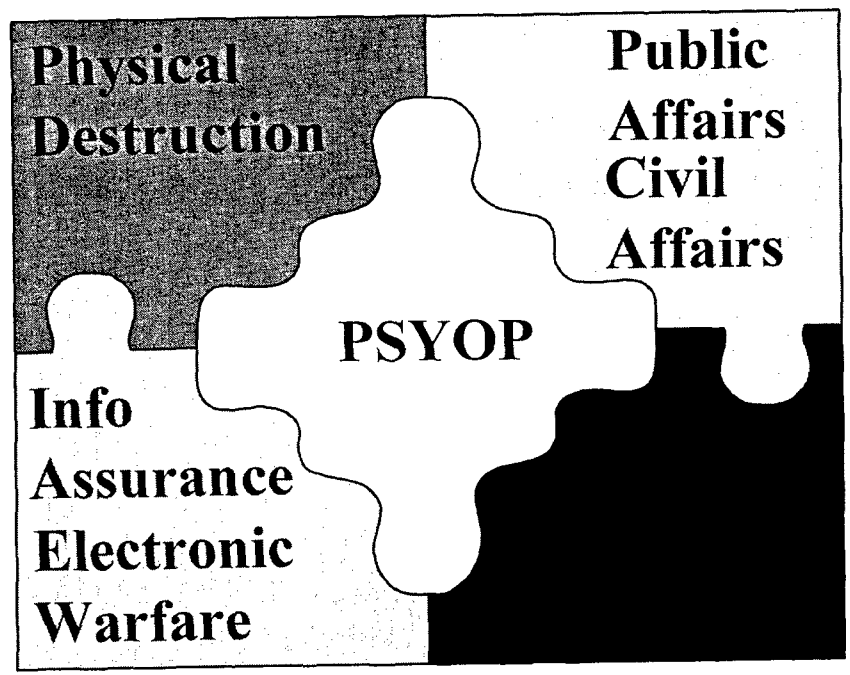
Land Information Warfare Activity (LIWA) Support



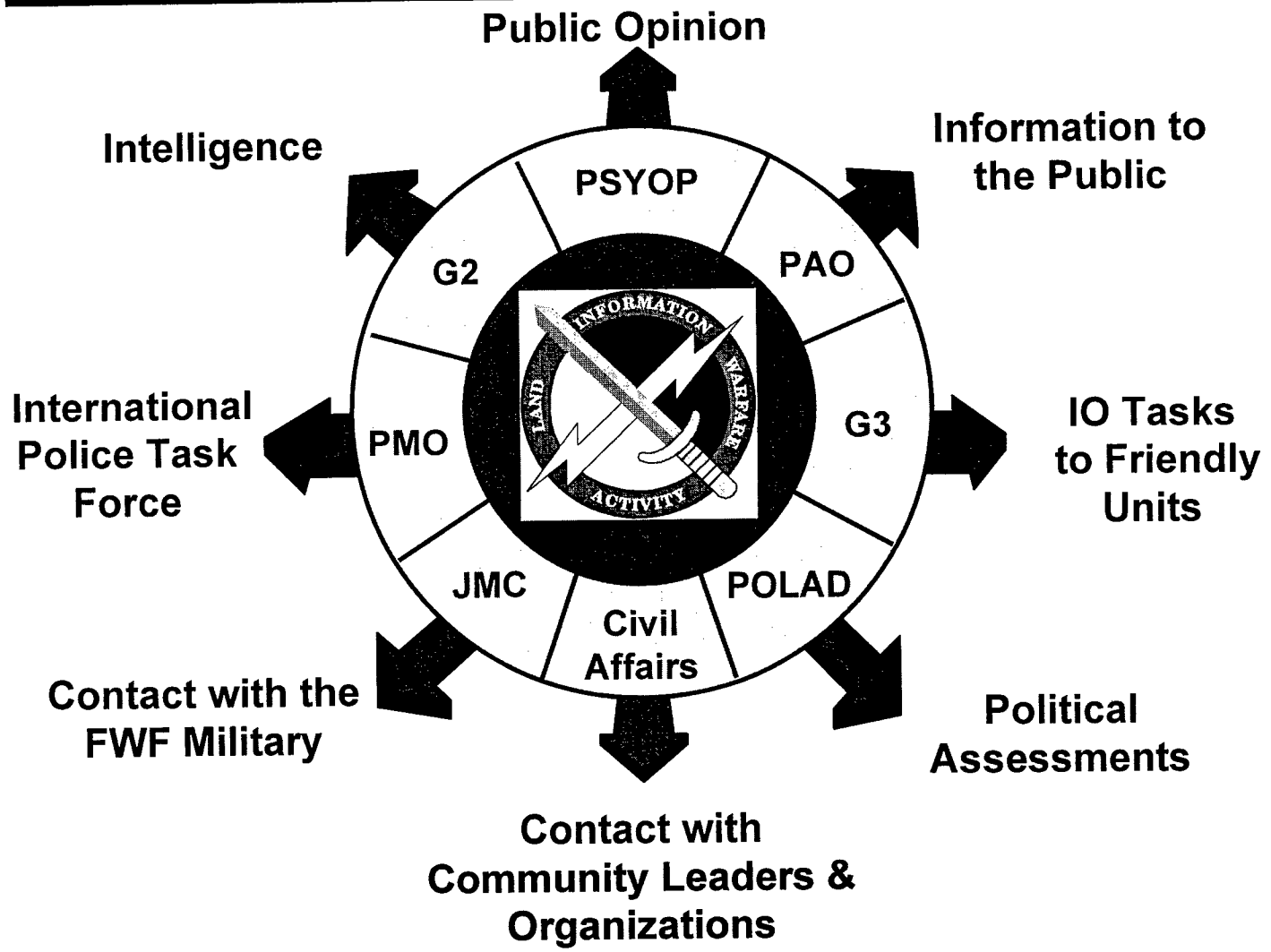
Support teams, custom databases, and special analyses projected world wide to support:

- Planning
- Training
- Operations

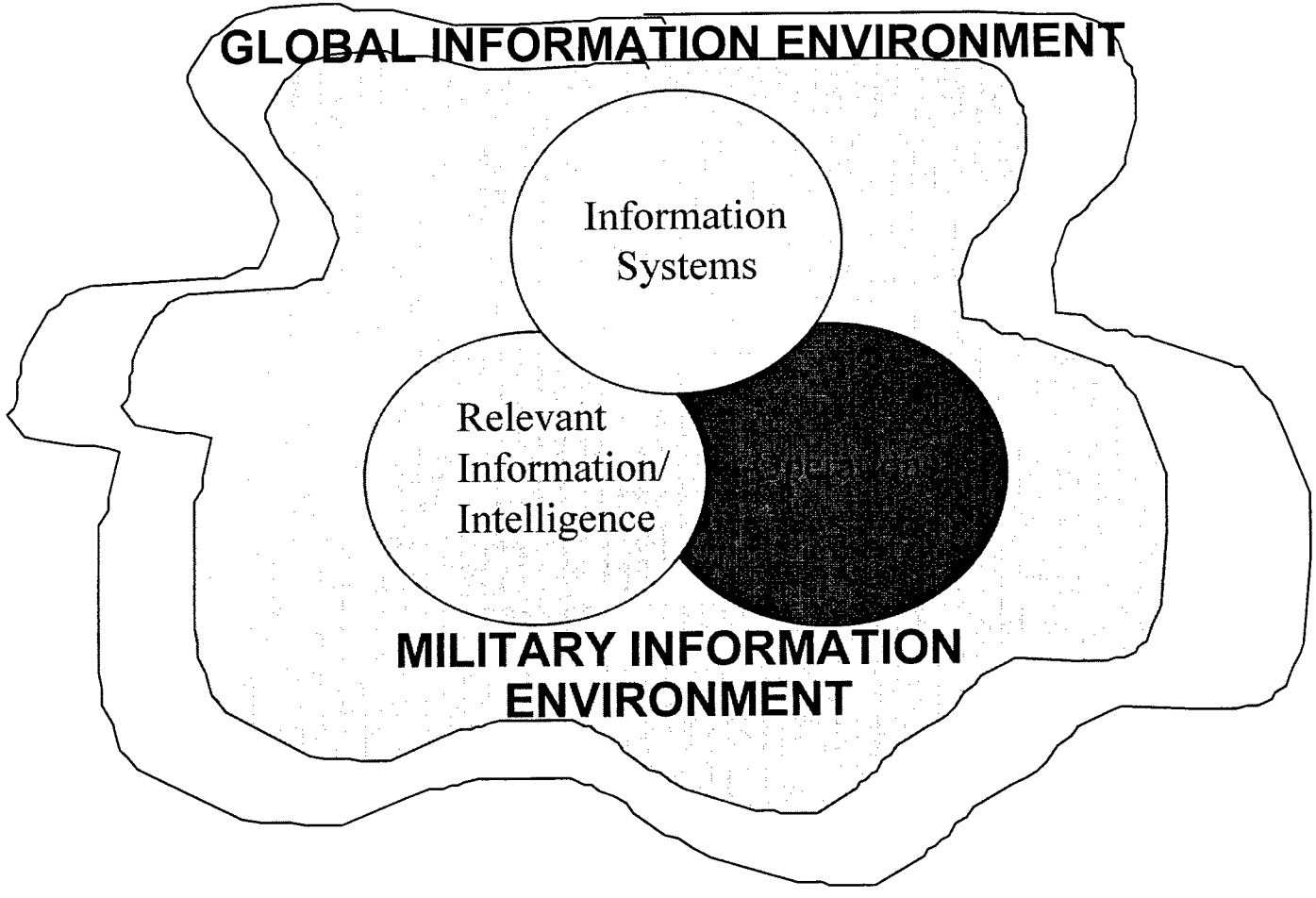
IO Integration and Coordination



IO Staff Functions



IO Environment and Components



How IO Themes are Reviewed & Disseminated

Message to Politicians: You will be held accountable for your actions.

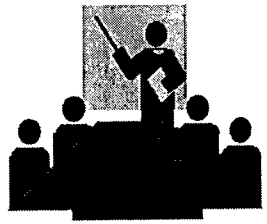
Press Conferences

Pamphlet Distribution

Joint Patrolling

Commander Approves

LIWA COMPILES INITIAL THEMES



IO Working Group Refines & Coordinates Themes



END STATE: Stable & Peaceful AOR!

Radio Broadcasts

TF CDR Mtgs. with Local Ldrs

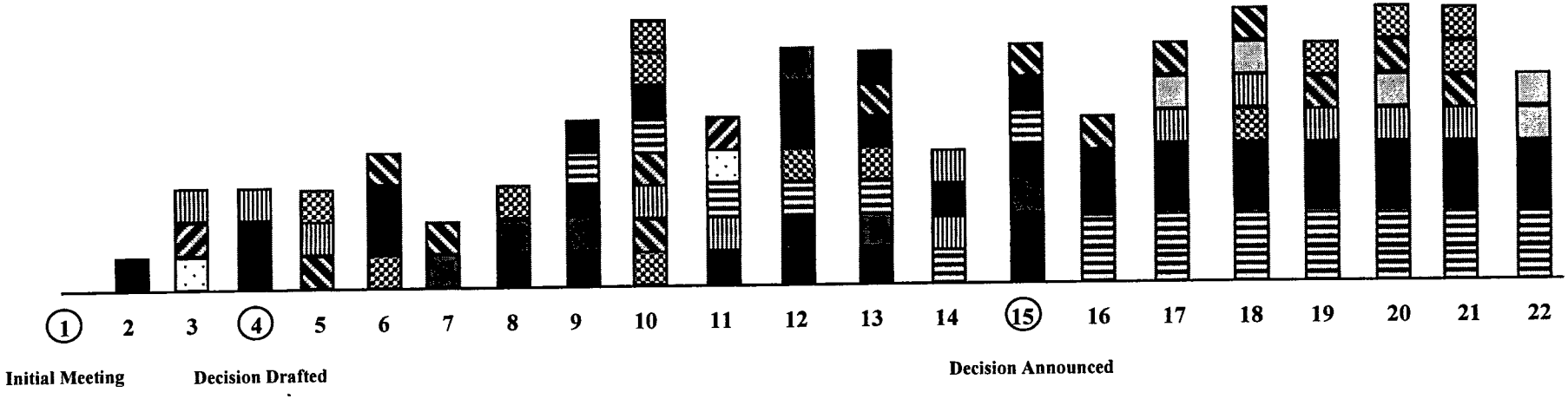
Message to Citizens: Unruly demonstrations will hurt the peace process.

SFOR Soldier Interaction with Locals

IO Implementation Graphic

Brcko Arbitration Decision

15 FEB 97



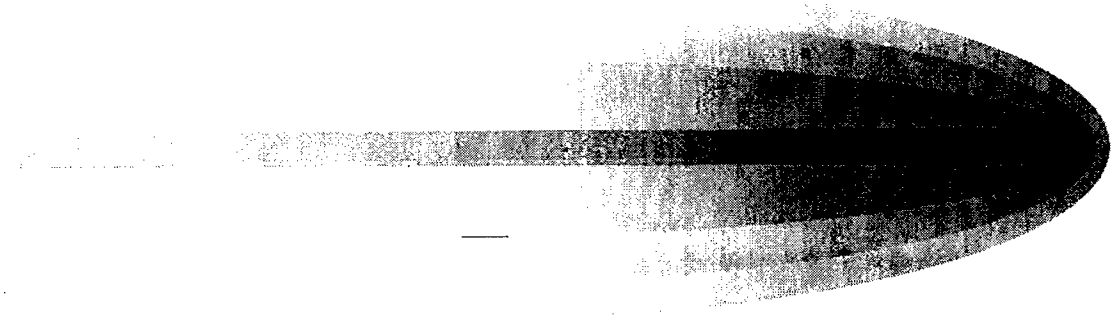
PSYOP RADIO (COMMENTARY)	PRESS RELEASE	JMC	IPTF ACTION
PSYOP RADIO (THEMATIC BURSTS)	PRESS GUIDANCE	JMC BILAT	
PSYOP HANDBILL	PUBLIC AFFAIRS RADIO SPOT	JMC WCM	
PSYOP LOUDSPEAKER	POLAD MEETING W/POL LDRS	TF 1/26	
PRESS CONFERENCE	G5 - CIVIL AFFAIRS	TF 1/18	

Integration of PSYOP and Intelligence



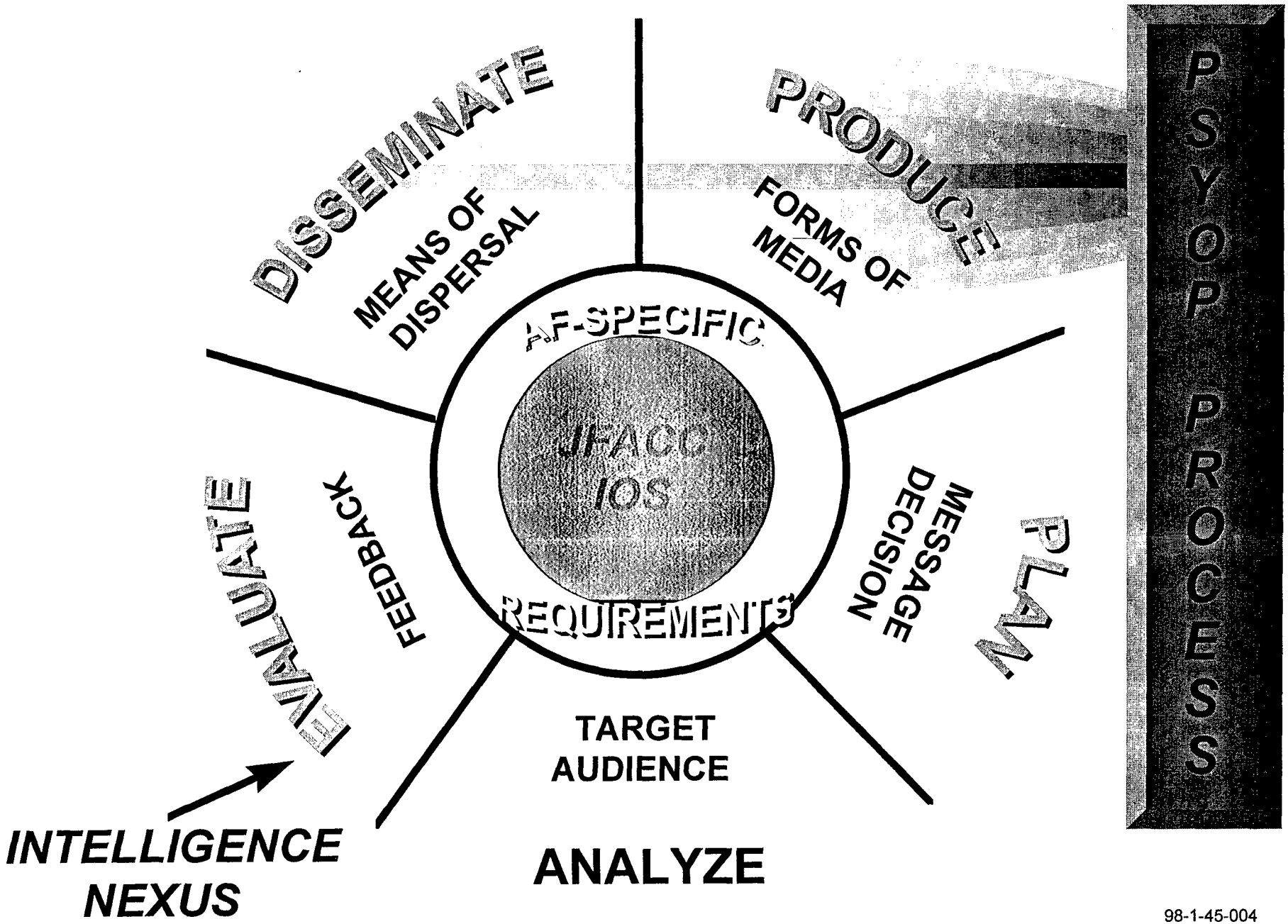
Colonel Frank L. Goldstein, Ph.D.
Director of Psychological Operations

98-1-45-001



"There are but two powers in the world: the sword and the mind. Invariably, the sword is ... beaten by the mind."

Napoleon

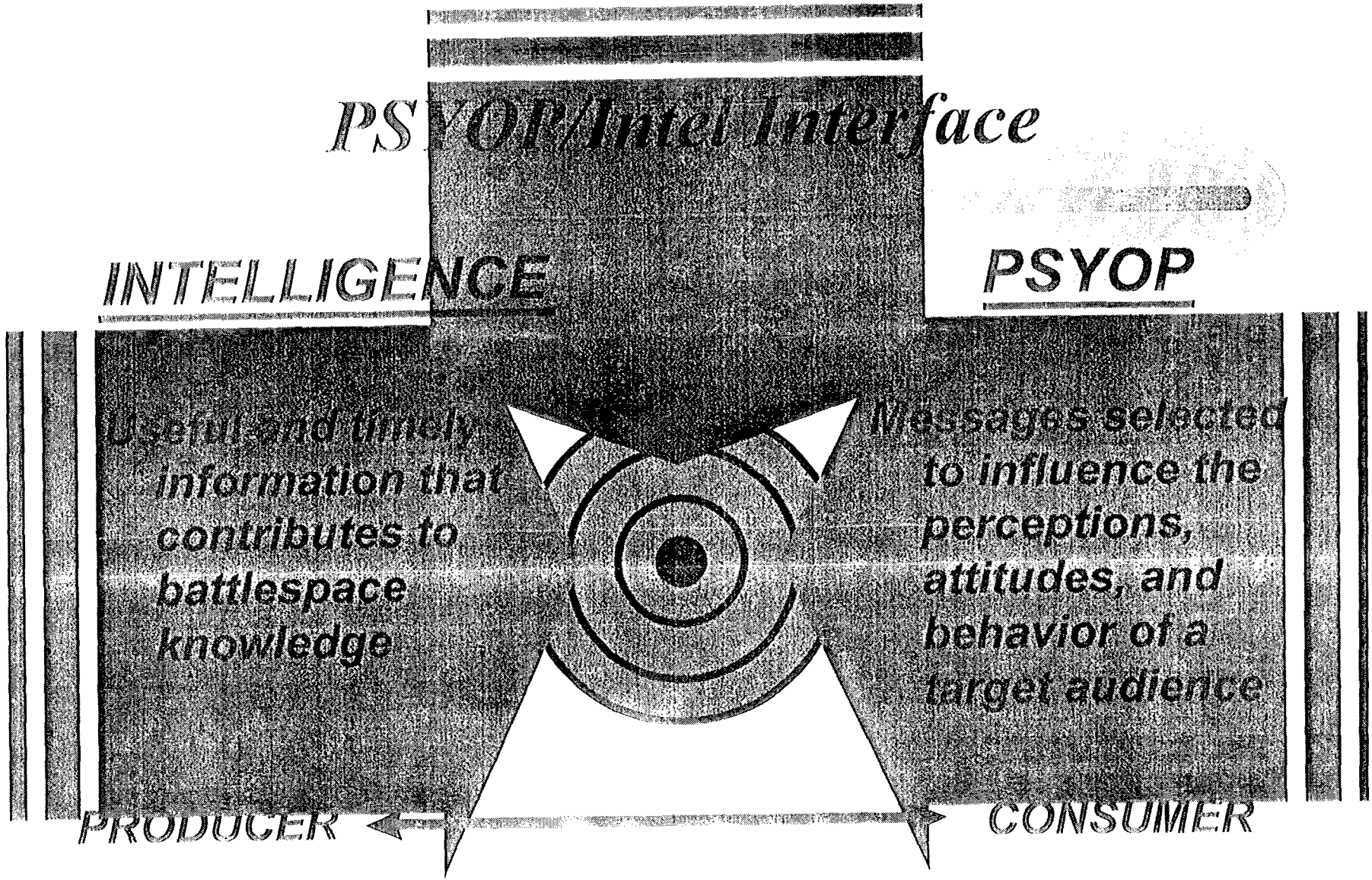

PSYOP PROCESS
DISSEMINATE
MEANS OF DISPERSAL
PRODUCE
FORMS OF MEDIA
AF-SPECIFIC
IFACE
IOS
REQUIREMENTS
PLAN
MESSAGE DECISION
TARGET AUDIENCE
ANALYZE
FEEDBACK
EVALUATE
INTELLIGENCE NEXUS

98-1-45-004

PSYOP Basics

- **Intelligence key to PSYOP and information operations**
  - **PSYOP depends on real-time, all-source intelligence**
  - **PSYOP requires extensive peacetime and pre-crisis/conflict battlespace preparation**
  - **PSYOP predicated on knowledge of military, political, economic, and social targets**

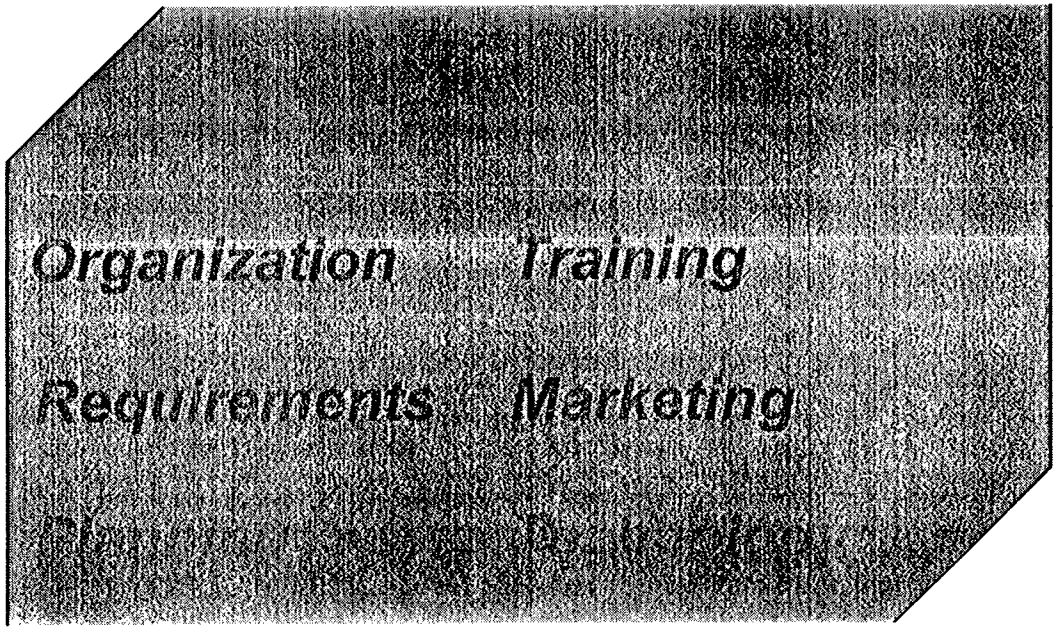
PSYOP/Intel Interface



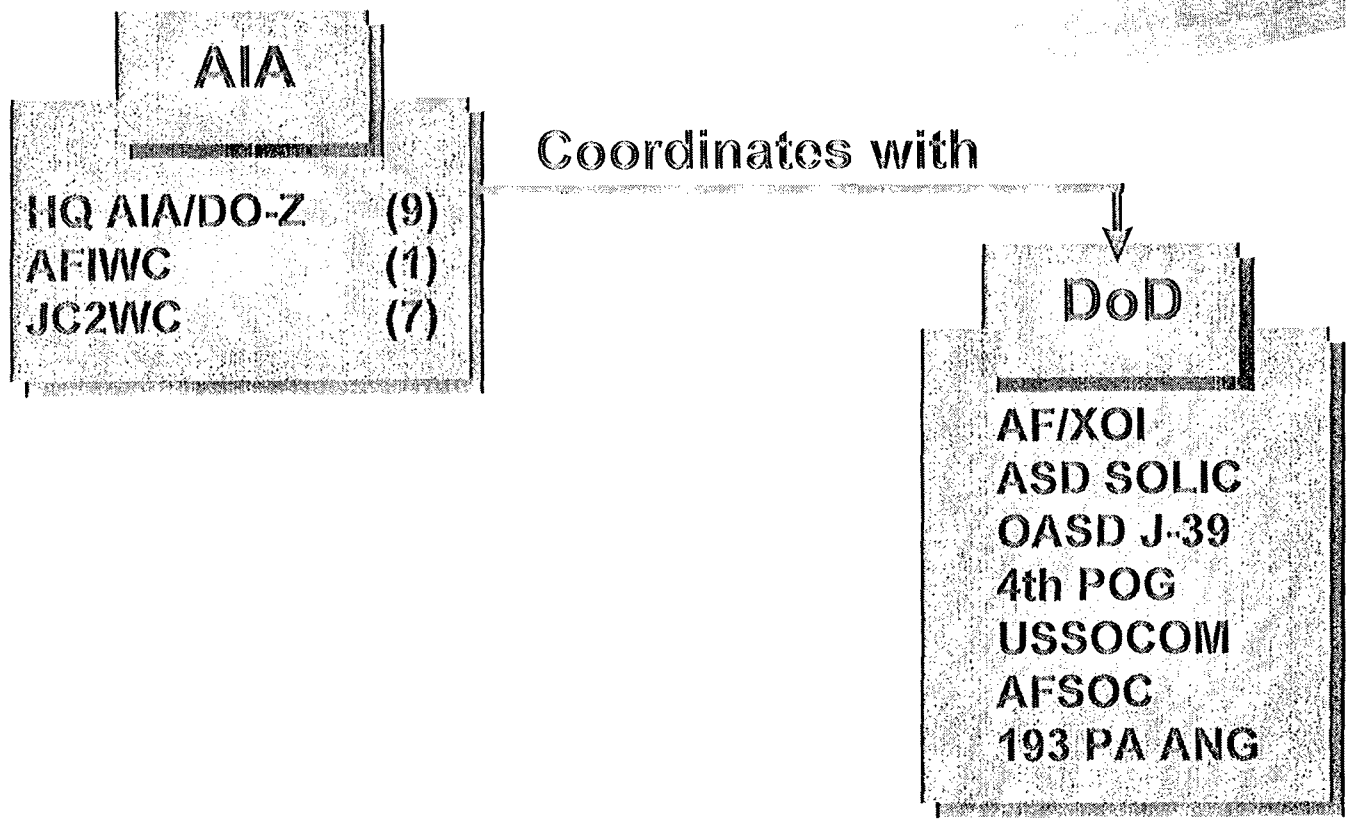
98-1-45-006

Integration Means ...

Enhancing the exchange and usability of PSYOP-related intelligence through:



AF PSYOP Resources



98-1-45-008

Aspects of Integration



- **Organization**
  - **AF intel production/PSYOP colocated at AIA**
  - **PSYOP steering committee and working groups**
- **Training**
  - **Inclusion of PSYOP in intel curriculum**
  - **PSYOP training for information operators**

Aspects of Integration



- **Requirements**
  - Central PSYOP collection management office
  - Re AF force protection, air operations, strategic planning
- **Marketing**
  - Psychological dimension of AF air operations and information battlespace
  - "PSYOP in a box," Intelink homepage

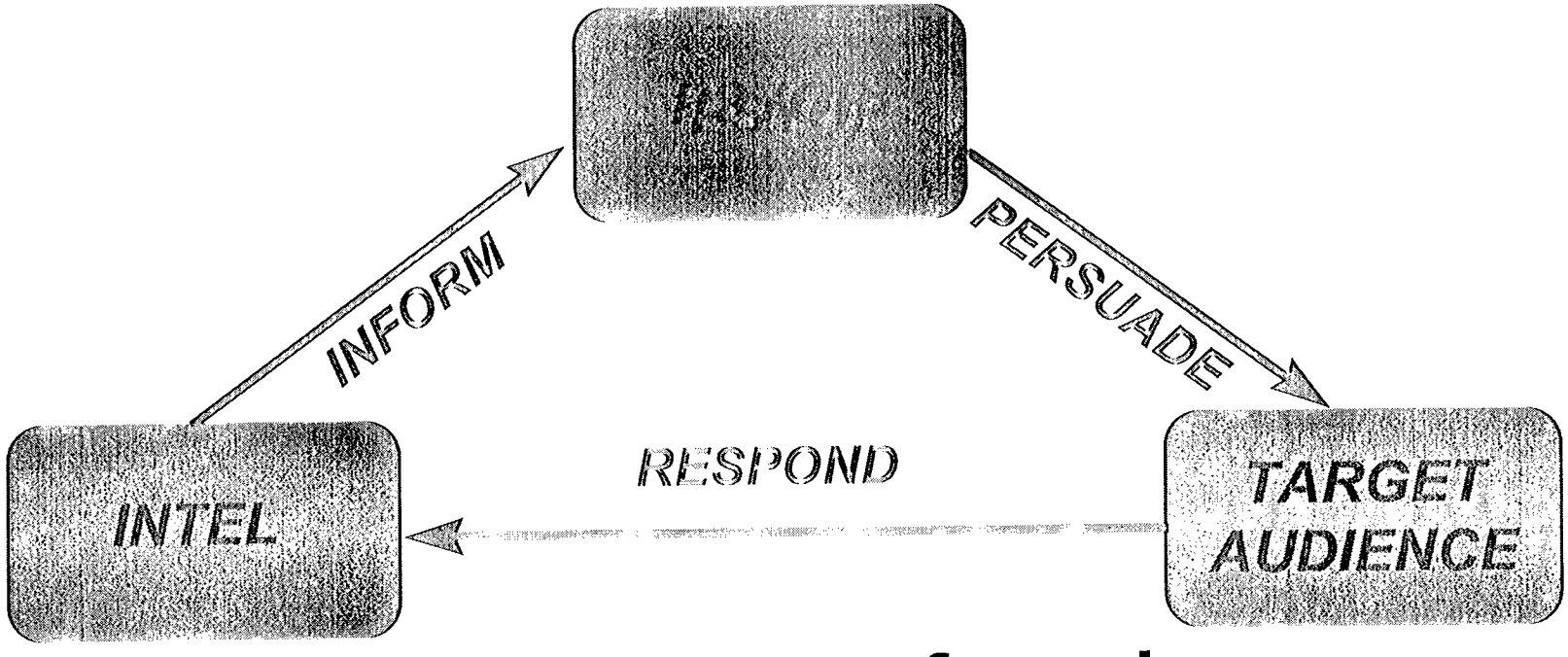
Aspects of Integration



- **Planning**
  - Enemy demoralization = priority objective
  - Psychological effects of air operations
- **Technology**
  - Online AF archive of PSYOP data/materials
  - Advanced technologies for the exchange and application of PSYOP-related intel

The Upshot:

PSYOP intel integration results in ...



... a synergy of words

98-1-45-012

NOTES TO ACCOMPANY SLIDES ON INTEGRATION OF PSYOP AND INTELLIGENCE

Colonel Frank L. Goldstein, Ph.D.

Intelligence is crucial to both information operations and psychological operations. Certainly it is incumbent on any information or intelligence organization to view PSYOP as integral to its responsibilities (Slide 1).

US air forces must be prepared to support joint PSYOP objectives across the range of military operations. Napoleon's quote (Slide 2) sets the stage for our overall discussion. The power of the mind is key to perceptions, attitudes, decisionmaking, and, ultimately, behavior modification in battlespace operations.

The PSYOP view (Slide 3) of target audience, information, intelligence and subsequent behavior change is the bedrock of our understanding of integration. The interrelationship of these elements is critical to the collection and analysis of needed data on military, religious, political, economic and cultural contexts. The contextual data, in turn, sheds light on the controlling beliefs, perceptions, and attitudes that affect operations. If properly influenced, these factors can lead to dominance in information battlespace.

Delivering precise, timely, and, ultimately, useful information regarding the contextual nuances of a target audience to the PSYOP practitioner is the task of intelligence, which is shot through the entire PSYOP process (Slide 4). Indeed, intelligence informs the events and decision points during each phase of that process, placing its stamp on the analysis and determination of the target audience, the content and delivery of messages, and the feedback needed to evaluate and, if necessary, adjust the process. Air Force doctrine states that PSYOP is a joint enterprise; hence, JFACC and IOD are both prospective customers of and contributors to any joint-service PSYOP campaign.

PSYOP (Slide 5) is in large measure only as good as the intelligence that informs its analysis, shapes the content and delivery of its messages, and eventually provides the feedback needed to evaluate and, if indicated, adjust its process.

The relationship of intelligence to PSYOP (Slide 6) is that of producer to consumer. "Interface" in this context refers to the exchange of

meaningful PSYOP-related intelligence, which gives clarity, substance, and precision to the messages crafted for the target audience.

Additionally, the timely exchange (Slide 7) and usability of PSYOP-related intelligence are indicators of the cohesion and potential synergy between two otherwise disparate processes: one producing mission-critical information in accordance with stated operational requirements, the other melding data from various sources into coherent themes that will resonate with a given audience. Enhancing that cohesion are at least six activities: organizing Air Force PSYOP, training for PSYOP, framing PSYOP intelligence requirements, marketing PSYOP, planning for PSYOP missions, and harnessing enabling PSYOP technologies.

Participating in, and in some cases, leading this integration effort within the Air Force is the recently established Psychological Operations Office (Slide 8) at HQ Air Intelligence Agency. While any PSYOP role is unlikely outside a joint PSYOP framework, the integration of PSYOP within the Air Force is necessarily a mutually supporting endeavor involving Air Staff, Air Force Special Operations Command, the Air Force information operations community, Air Intelligence Agency, Air Education and Training Command, and the service's only PSYOP platform, Commando Solo.

Thus, by "organization" (Slide 9) we visualize a pairing of some PSYOP management aspects with intelligence collection and production at AIA, in part as a recognition of their mutuality and necessary synergy in support of information operations.

Additionally, re training, we support the commingling of intelligence with PSYOP at the schoolhouse as a positive and important development—a development that places the needed emphasis on their common grounding in information operations.

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Marketing PSYOP within the military service communities is an educational as well as informational endeavor. (PSYOP, after all, is not a "rice bowl" issue.) PSYOP's joint nature and command and control implications have at times insulated and thus deprived those who most

needed PSYOP understanding from receiving it. Pentagon junior staff's misdirecting of PSYOP plans for Desert Shield is a prime example of information and intelligence not getting into the proper channels because of a lack of understanding of PSYOP relationships.

Planning is viewed in the context of both information and Air Force planners being aware of PSYOP as a priority objective, including a full understanding of the psychological effects of air operations (Slide 11).

Information operations and PSYOP technologies represent a rapidly changing and dynamic environment. Technological spin-offs that may have value to PSYOP customers, such as USSOCOM, AFSOC, the 4th POG, and the 193rd PANG, need to be provided in a timely and efficient manner.

Finally, information operations, PSYOP, and intelligence are integrated at every level. PSYOP is an integral part of information operations, while both PSYOP and information operations fully depend on intelligence to reach their respective audiences and prepare their battlespace plans. Our future success hinges on the synergy of these discrete operations.

NOTES TO ACCOMPANY SLIDES ON INTEGRATION OF PSYOP AND INTELLIGENCE

Colonel Frank L. Goldstein, Ph.D.

Intelligence is crucial to both information operations and psychological operations. Certainly it is incumbent on any information or intelligence organization to view PSYOP as integral to its responsibilities (Slide 1).

US air forces must be prepared to support joint PSYOP objectives across the range of military operations. Napoleon's quote (Slide 2) sets the stage for our overall discussion. The power of the mind is key to perceptions, attitudes, decisionmaking, and, ultimately, behavior modification in battlespace operations.

The PSYOP view (Slide 3) of target audience, information, intelligence and subsequent behavior change is the bedrock of our understanding of integration. The interrelationship of these elements is critical to the collection and analysis of needed data on military, religious, political, economic and cultural contexts. The contextual data, in turn, sheds light on the controlling beliefs, perceptions, and attitudes that affect operations. If properly influenced, these factors can lead to dominance in information battlespace.

Delivering precise, timely, and, ultimately, useful information regarding the contextual nuances of a target audience to the PSYOP practitioner is the task of intelligence, which is shot through the entire PSYOP process (Slide 4). Indeed, intelligence informs the events and decision points during each phase of that process, placing its stamp on the analysis and determination of the target audience, the content and delivery of messages, and the feedback needed to evaluate and, if necessary, adjust the process. Air Force doctrine states that PSYOP is a joint enterprise; hence, JFACC and IOD are both prospective customers of and contributors to any joint-service PSYOP campaign.

PSYOP (Slide 5) is in large measure only as good as the intelligence that informs its analysis, shapes the content and delivery of its messages, and eventually provides the feedback needed to evaluate and, if indicated, adjust its process.

The relationship of intelligence to PSYOP (Slide 6) is that of producer to consumer. "Interface" in this context refers to the exchange of

meaningful PSYOP-related intelligence, which gives clarity, substance, and precision to the messages crafted for the target audience.

Additionally, the timely exchange (Slide 7) and usability of PSYOP-related intelligence are indicators of the cohesion and potential synergy between two otherwise disparate processes: one producing mission-critical information in accordance with stated operational requirements, the other melding data from various sources into coherent themes that will resonate with a given audience. Enhancing that cohesion are at least six activities: organizing Air Force PSYOP, training for PSYOP, framing PSYOP intelligence requirements, marketing PSYOP, planning for PSYOP missions, and harnessing enabling PSYOP technologies.

Participating in, and in some cases, leading this integration effort within the Air Force is the recently established Psychological Operations Office (Slide 8) at HQ Air Intelligence Agency. While any PSYOP role is unlikely outside a joint PSYOP framework, the integration of PSYOP within the Air Force is necessarily a mutually supporting endeavor involving Air Staff, Air Force Special Operations Command, the Air Force information operations community, Air Intelligence Agency, Air Education and Training Command, and the service's only PSYOP platform, Commando Solo.

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160th Special Operations Aviation Regiment (Airborne)



MAINTAINING SOA RELEVANCE IN AN UNCERTAIN FUTURE

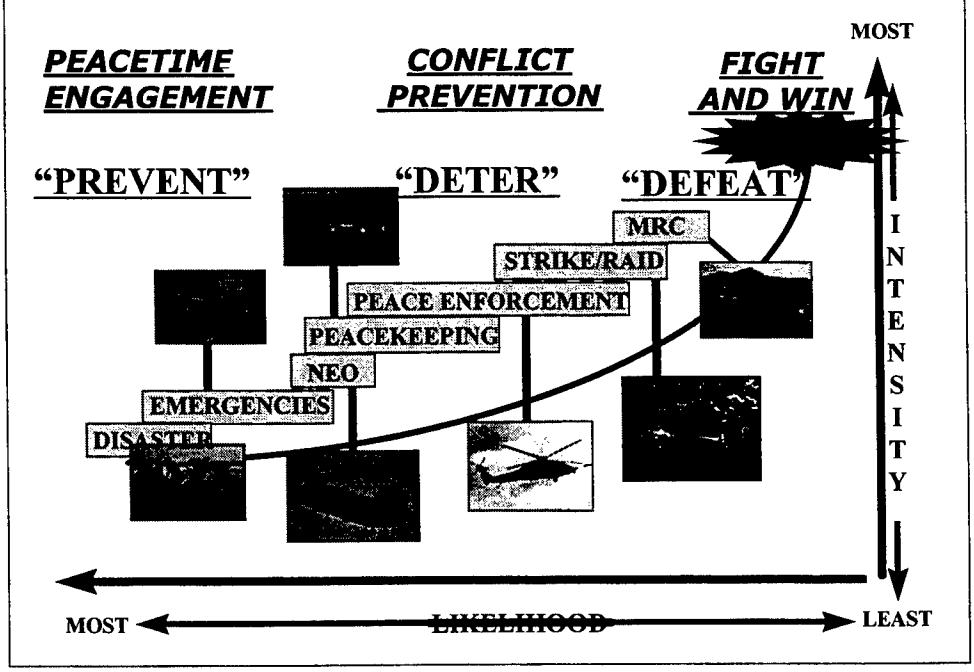
160TH SOAR VISION 2010

The 160th SOAR's vision for 2010 is the azimuth and power setting to the sizing, structure, organizing and equipping of the 160th SOAR; as well as establishing / developing the future doctrine and TTP for the SOAR for full spectrum operations in support of JOINT VISION 2010

160th Special Operations Aviation Regiment (Airborne)

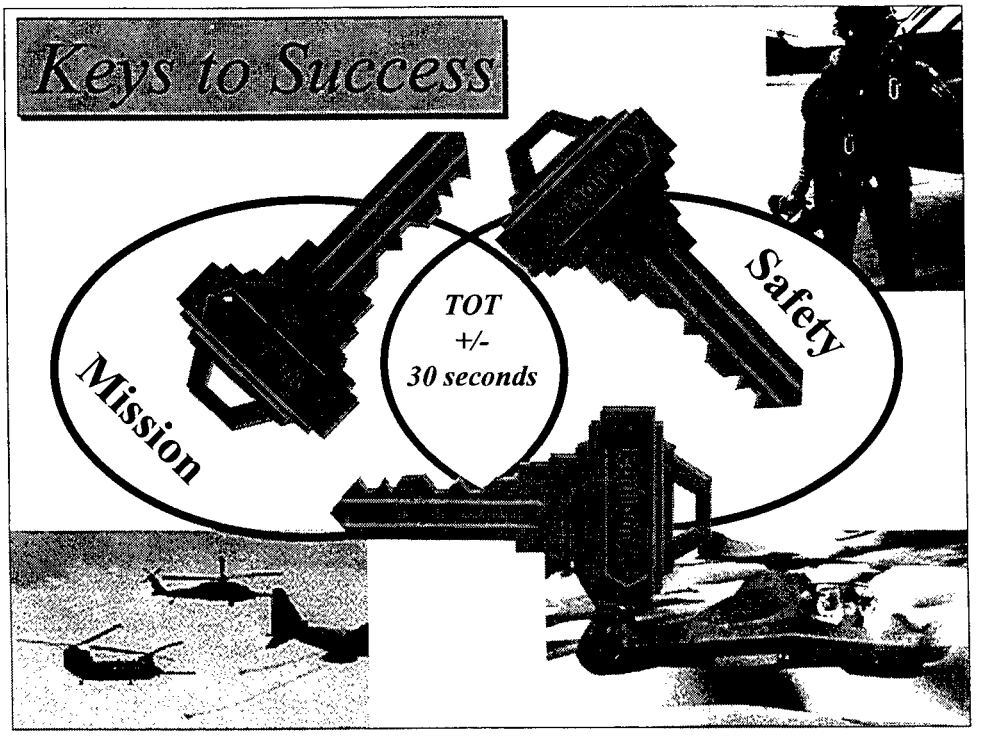
BASIC TRUTHS

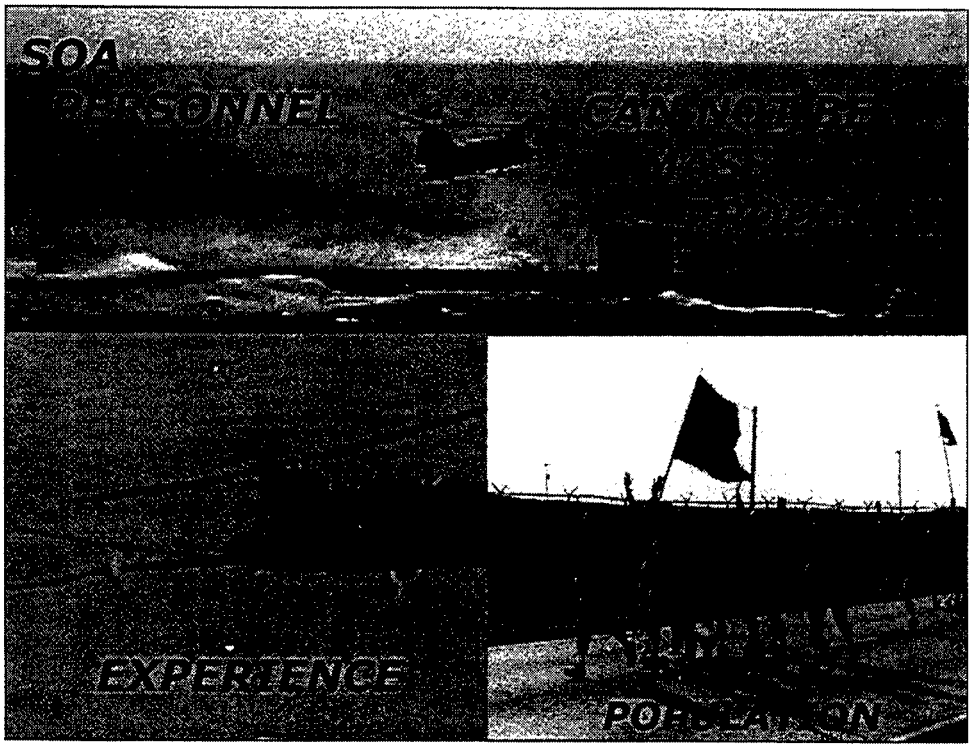
1. *No replacement aircraft through 2010.*
2. *OMA dollars will remain the same or will decrease.*
3. *Simulation will continue to compete with the Flying Hour Program.*
4. *Our mission profiles will grow verse decrease and our ATM tasks will grow accordingly.*
5. *Black SOF missions today will become white SOF missions tomorrow.*
6. *The difference between ARSOA TTPs and conventional aviation TTPs does not lie in actions from the PZ to the RP; it lies in the action from RP to target.*
7. *SOAR aircrews can not be mass produced quickly (2-3 years FMQ)*



MISSION

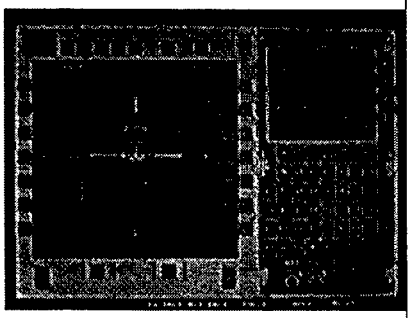
Equip, train, validate, employ and fight SOA forces worldwide in support of contingency missions, the JTF Commander and the Warfighting CINCs.

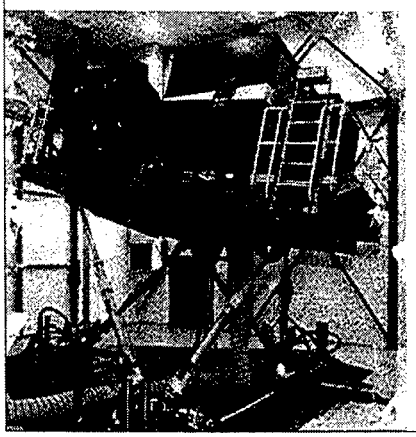




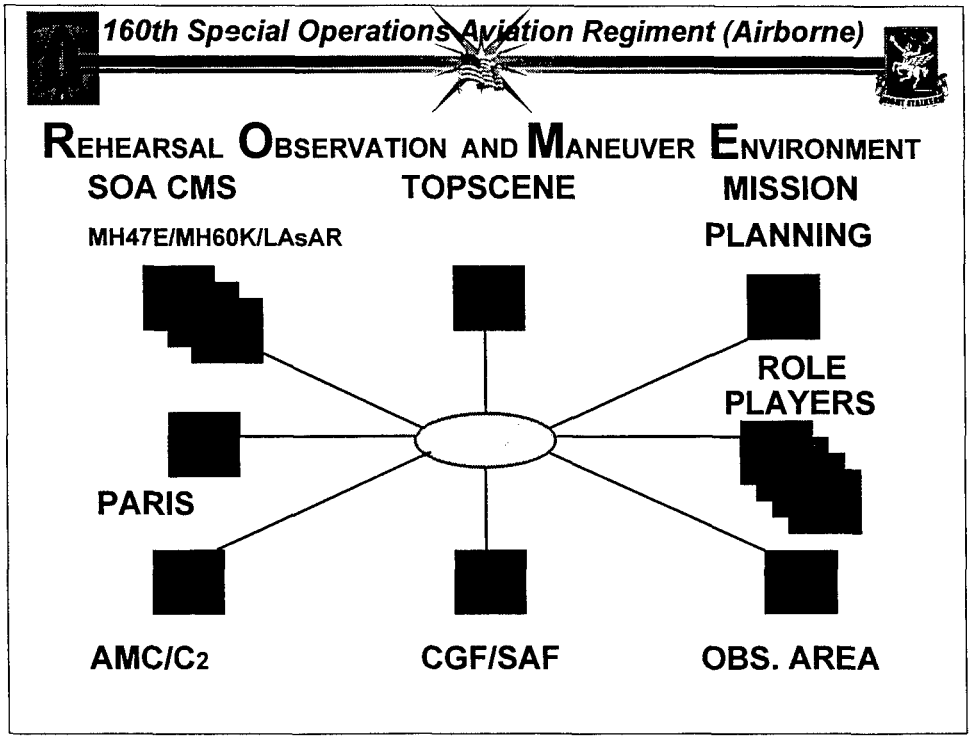
160th Special Operations Aviation Regiment (Airborne)

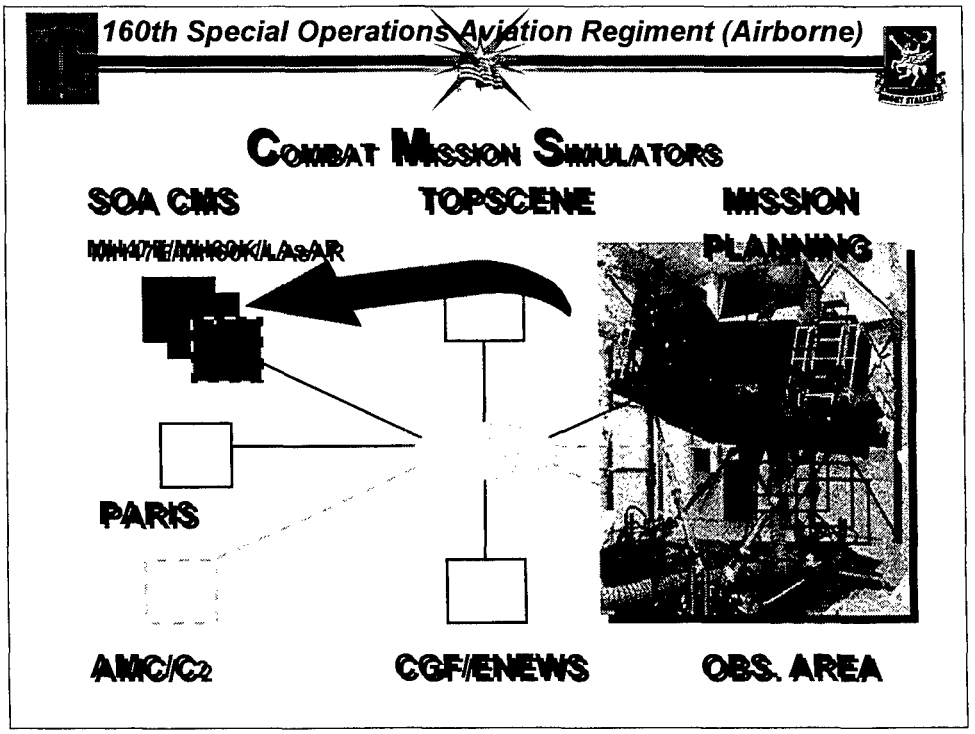
TRAINING

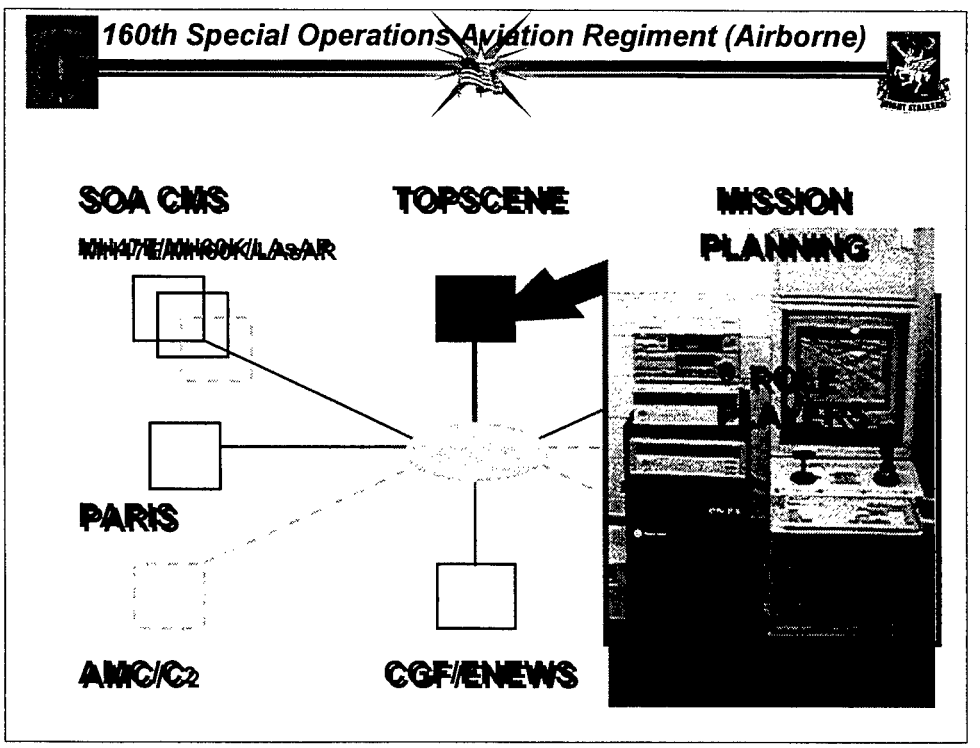


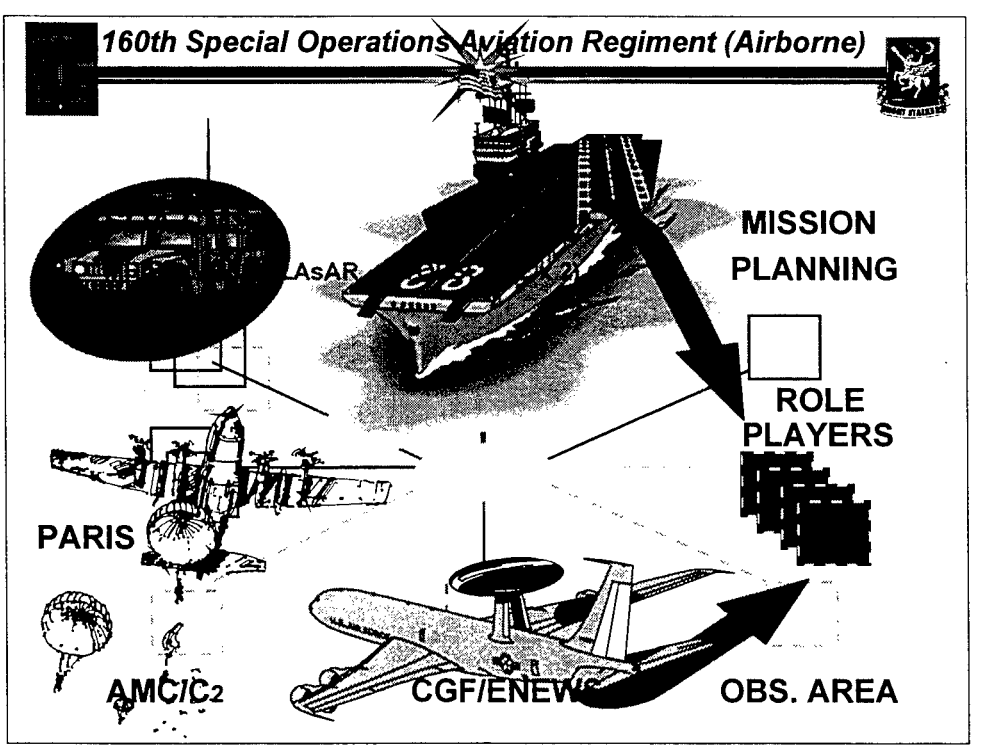


Capitalizing on Simulation

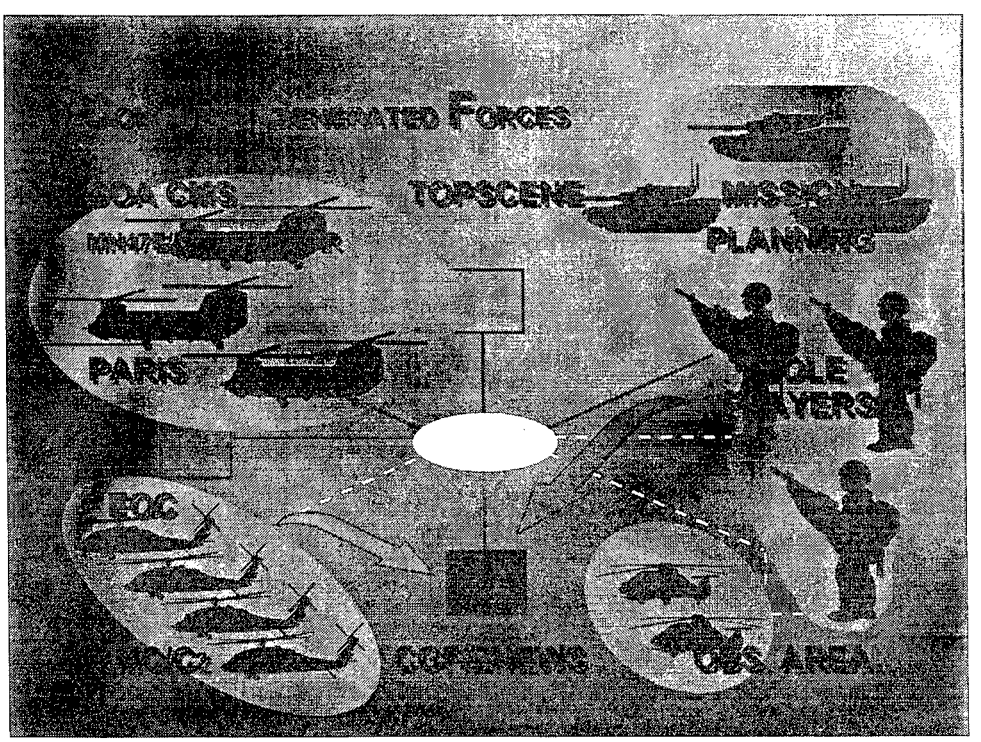

160th Special Operations Aviation Regiment (Airborne)
REHEARSAL OBSERVATION AND MANEUVER ENVIRONMENT
SOA CMS
MH47E/MH60K/LAsAR
TOPSCENE
MISSION
PLANNING
ROLE
PLAYERS
PARIS
AMC/C2
CGF/SAF
OBS. AREA

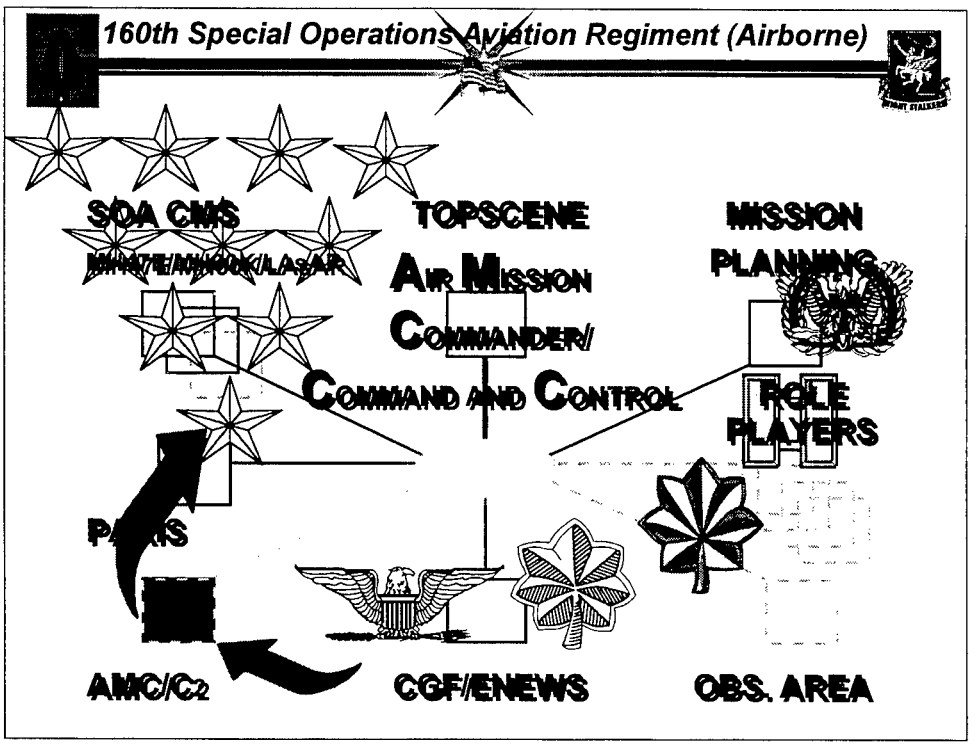

160th Special Operations Aviation Regiment (Airborne)
COMBAT MISSION SIMULATORS
SOA CMS
MH47E/MH60K/LAsAR
TOPSCENE
MISSION
PLANNING
PARIS
AMC/C2
CGF/ENEWS
OBS. AREA

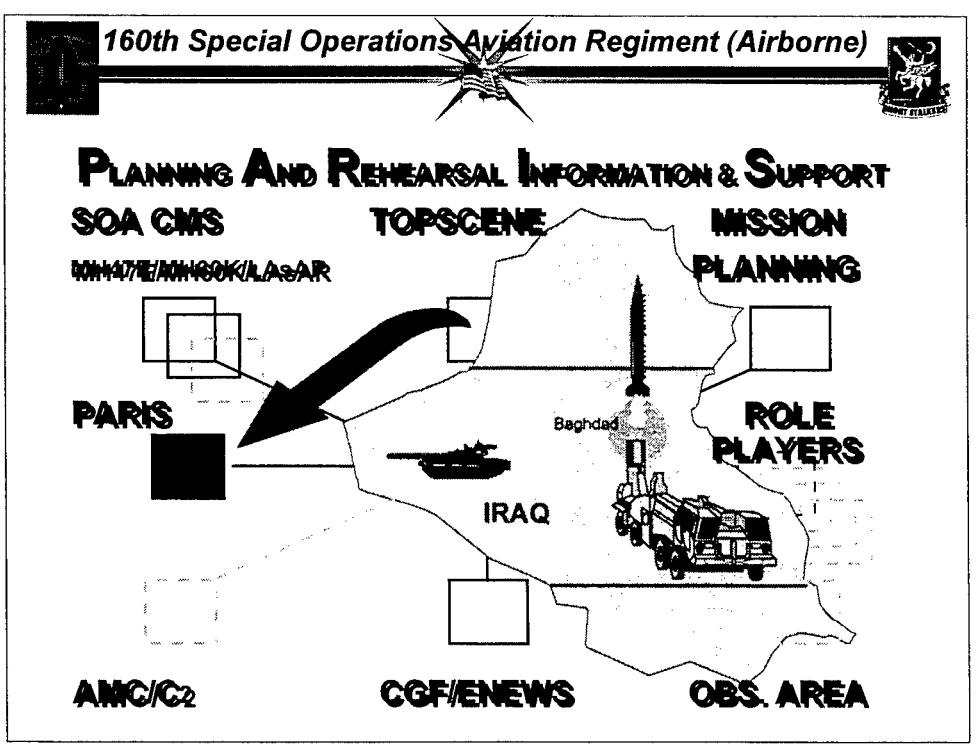

160th Special Operations Aviation Regiment (Airborne)
SOA CMS
MH47E/MH60K/LAsAR
TOPSCENE
MISSION
PLANNING
PARIS
AMC/C2
CGF/ENEWS


160th Special Operations Aviation Regiment (Airborne)
AsAR
MISSION
PLANNING
ROLE
PLAYERS
PARIS
AMC/C2
CGF/ENEW
OBS. AREA


160th Special Operations Aviation Regiment (Airborne)
FRANK HALL OBSERVATION AREA
TOPSCENE
MISSION PLANNING
PARIS
ROLE PLAYERS
EOC/WARP
IRAQ

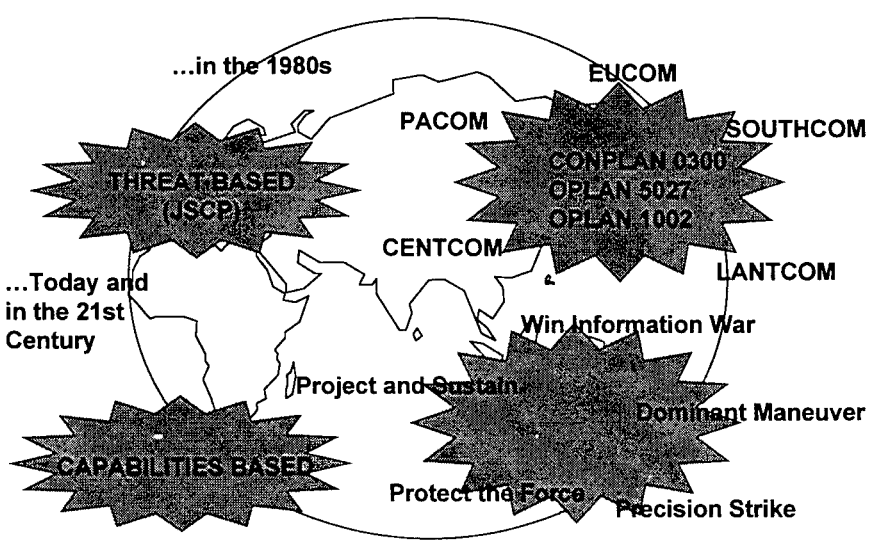

PENETRATED FORCES
TOPSCENE
PARIS
EOC
OBS AREA

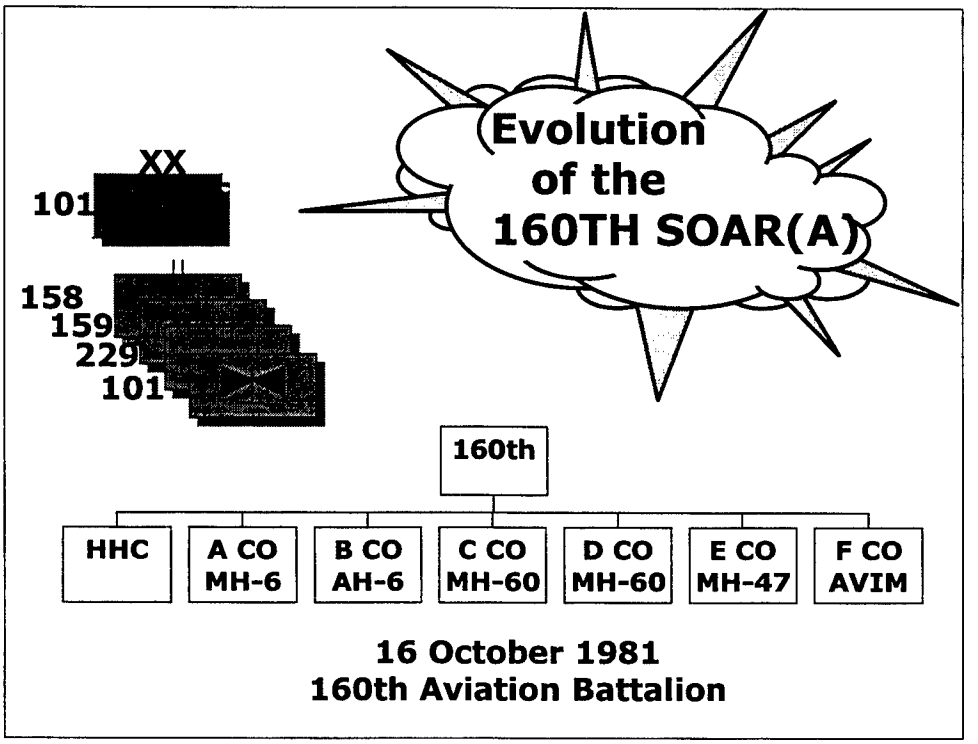

160th Special Operations Aviation Regiment (Airborne)
SOA CMS
TOPSCENE
MISSION PLANNING
AIR MISSION COMMANDER/ COMMAND AND CONTROL
ROLE PLAYERS
AMC/C2
CGF/ENEWS
OBS. AREA

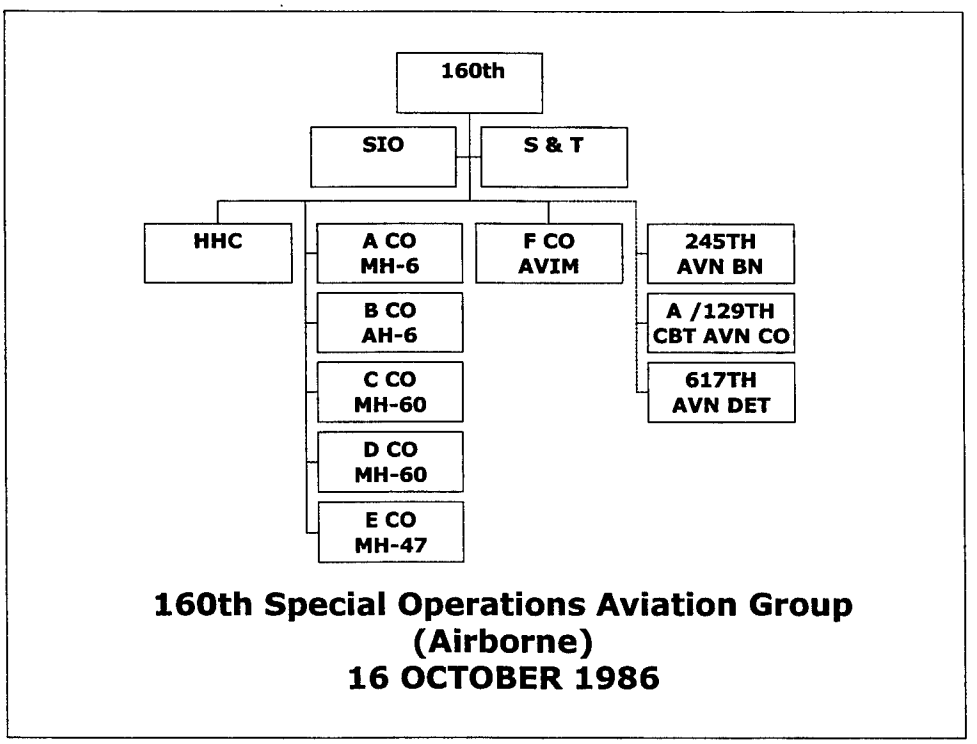

160th Special Operations Aviation Regiment (Airborne)
PLANNING AND REHEARSAL INFORMATION & SUPPORT
SOA CMS
TOPSCENE
MISSION PLANNING
PARIS
Baghdad
ROLE PLAYERS
IRAQ
AMC/C2
CGF/ENEWS
OBS. AREA

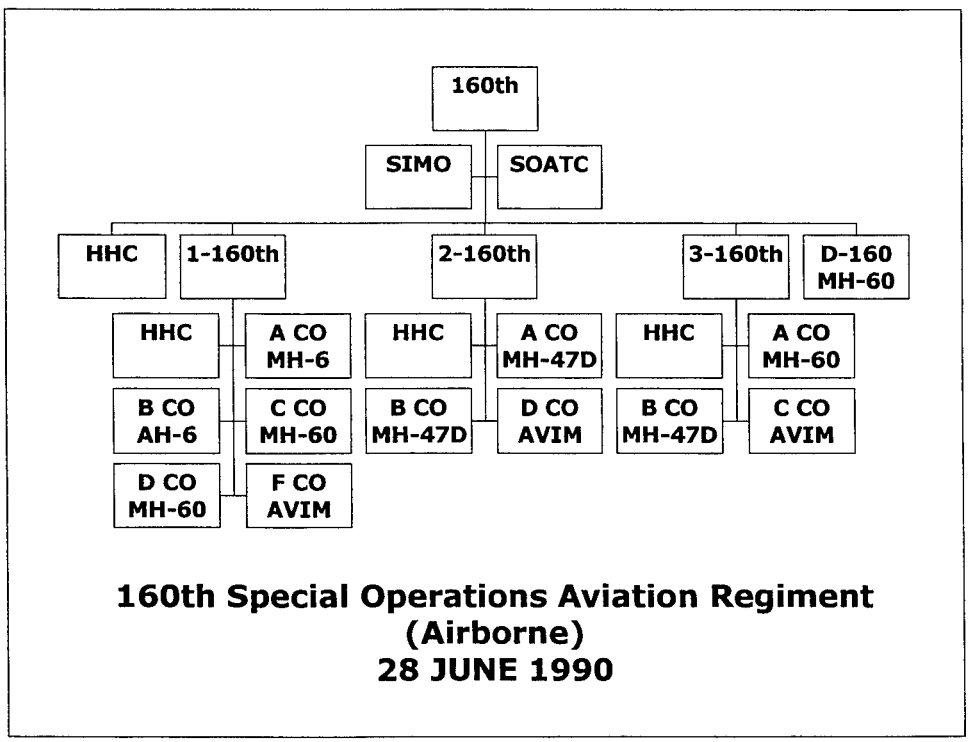


FORCE STRUCTURE-- YESTERDAY & TODAY

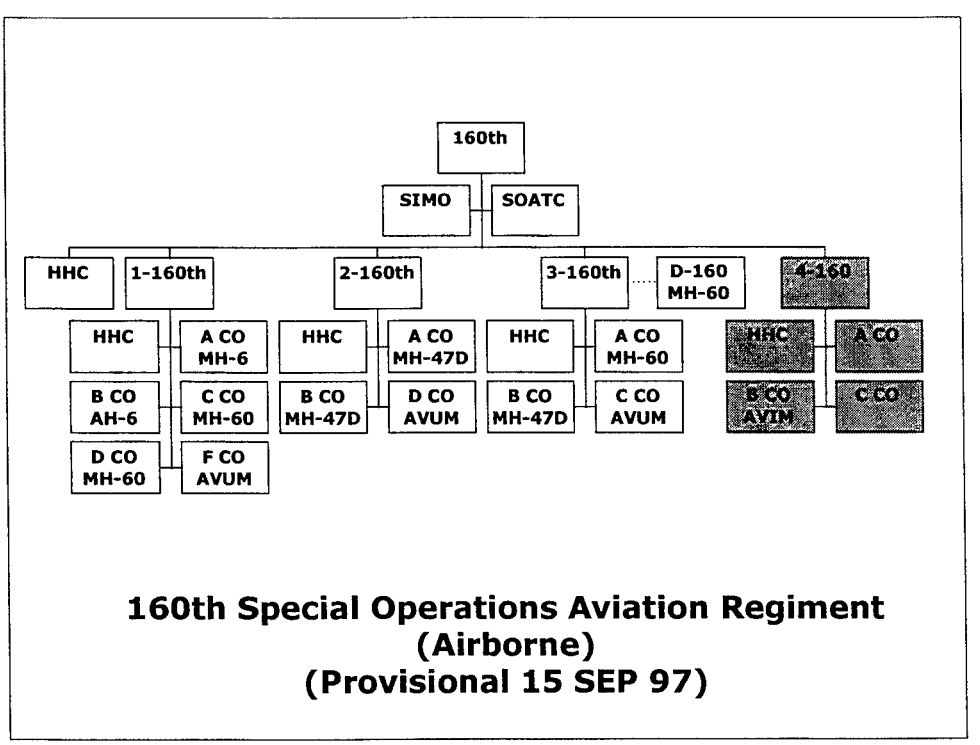



Evolution
of the
160TH SOAR(A)
XX
101
158
159
229
101
160th
HHC
A CO
MH-6
B CO
AH-6
C CO
MH-60
D CO
MH-60
E CO
MH-47
F CO
AVIM
16 October 1981
160th Aviation Battalion


160th
SIO
S & T
HHC
A CO
MH-6
B CO
AH-6
C CO
MH-60
D CO
MH-60
E CO
MH-47
F CO
AVIM
245TH
AVN BN
A /129TH
CBT AVN CO
617TH
AVN DET
160th Special Operations Aviation Group
(Airborne)
16 OCTOBER 1986

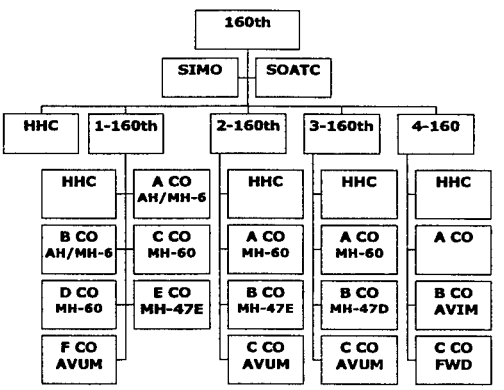


160th Special Operations Aviation Regiment
(Airborne)
28 JUNE 1990

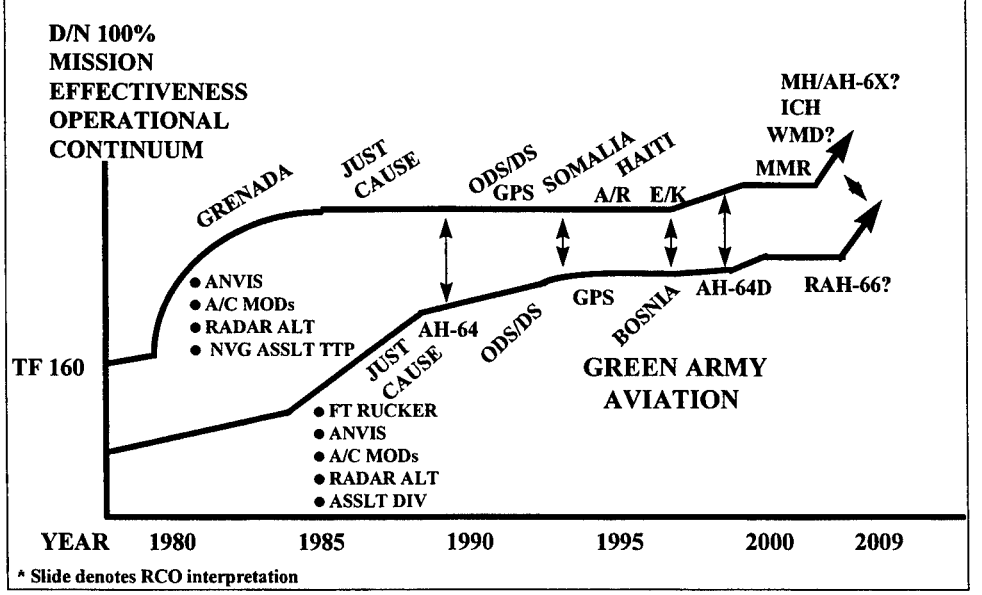


160th Special Operations Aviation Regiment
(Airborne)
(Provisional 15 SEP 97)

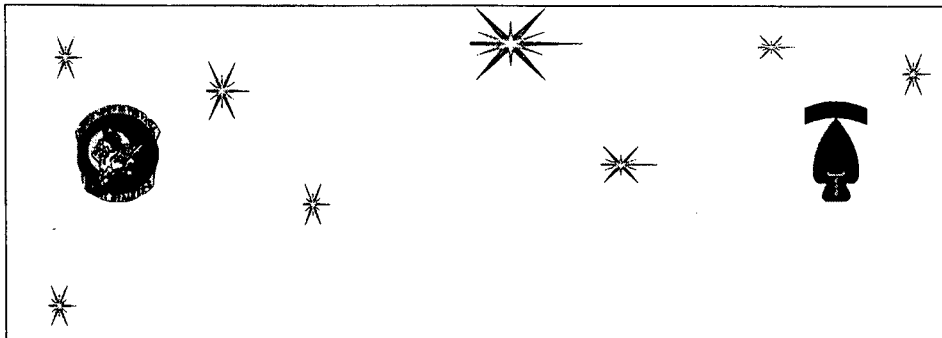
OBJECTIVE FORCE



MAINTAINING RELEVANCE



* Slide denotes RCO interpretation



MAINTAINING SOA RELEVANCE

IN AN UNCERTAIN FUTURE

AVIATION FOREIGN INTERNAL DEFENSE







AGENDA

- BACKGROUND
- USSOCOM // AFSOC INITIATIVES
- ADVISORY TASKS AND OBJECTIVES
- CONCEPT OF OPERATIONS
- OPERATIONAL/STRATEGIC RELEVANCE
- FUTURE DIRECTIONS
- CHALLENGES



BACKGROUND

- AFSOF FOREIGN AVIATION TRAINING AND ADVISORY CAPABILITY LOST c.1973
- LATER SOF FOREIGN TNG OPERATIONS FOCUSED ON SURFACE OPERATIONS
- HN AIR UNITS PURSUED UNILATERAL INTERESTS
- LONG-TERM AVIATION VOID CREATED JOINT-FORCE IMBALANCE



IMPACT

- REDUCES NCA/CINC OPTIONS
- U.S. AIR SUPPORT MAY NOT MATERIALIZE
- REDUCES HN CAPABILITIES WHEN CHIPS ARE DOWN
- AFFECTS US SECURITY INTERESTS



AVIATION-FID INITIATIVES

- 1986--DOD REORGANIZATION ACT ASSIGNS FID MISSION TO USSOCOM
- 1989--COMMANDO RALLY ADDRESSES AVIATION FID CONCEPT AND DOCTRINE
- 1991--JMA STUDY DEFINES NEED
- 1992--AIR FORCE PUBLISHES AVIATION FID DOCTRINE (AFM 2-11)
- 1992--SOCOM DIR 10-1 ASSIGNS AVIATION FID PROPONENCY TO AFSOC
- 1992--AFSOC STANDS UP NUCLEUS UNIT
- 1994--6th SPECIAL OPERATIONS SQUADRON (AFSOC) REACTIVATED



OPERATIONAL AVIATION DETACHMENTS

- OAD-A (TACTICAL): 13 PERSONNEL
- OAD-B (SUPPORT): 10 PERSONNEL
- OAD CHARACTERISTICS:
  - MULTI-DISCIPLINED
  - LANGUAGE QUALIFIED
  - AREA ORIENTED
  - CULTURALLY/POLITICALLY SENSITIVE



6 SOS THEATER ORIENTATION
(MANPOWER AUTHORIZATIONS)

OAD-As	THEATER
PRESENT	1 SOUTHCOM
	1 PACOM
	1 CENTCOM
	1 CENTCOM
Funded FY '98	+1 *TBD*
Projected FY '00	+1 *TBD*
	6 TOTAL



ADVISE/TRAIN/ASSESS FOREIGN AVIATION FORCES

- EMPLOYMENT
  - TACTICAL FLYING OPERATIONS
  - MISSION PLANNING
- SUSTAINMENT
  - AIRCRAFT MAINTENACE
  - AIR BASE SUPPLY AND TRANSPORTATION
  - LOGISTICS PLANNING
  - AIRBASE DEFENSE
- FORCE INTEGRATION



CONCEPT OF OPERATIONS

- DEPLOY AS TACTICAL ADVISORY TEAMS
- "A" TEAMS COLLOCATE WITH HN FORCES
- OAD-B SUPPORTS MULTIPLE TEAMS
- AUGMENT WITH NON-RESIDENT SKILLS
- ASSESS HN AVIATION CAPABILITIES
- ADVISE/TRAIN HN COUNTERPARTS
- PROVIDE JOINT-COMBINED LIAISON



OPERATIONAL-LEVEL OBJECTIVES

- FILL THE AVIATION VOID
- SUPPORT CINC'S OBJECTIVES
- BRING HOST-NATION AIR TO THE FIGHT--BUILD JOINTNESS
- FOCUS HN AVIATION PROGRAMS ON APPROPRIATE MISSIONS AND CAPABILITIES
- ENHANCE HN SELF-RELIANCE AND VIABILITY



STRATEGIC RELEVANCE

- FWD PRESENCE AND ENGAGEMENT
- ECONOMY OF FORCE



RESULTS

- BROUGHT HOST NATION AIR TO THE FIGHT
- INTEGRATED HN AIR INTO JOINT COMBINED TRAINING AND EXERCISE PLANS
- MADE IT A JOINT BATTLEFIELD
- FIRST TIME CONTACT BETWEEN HOST NATION AND JSOACC
- MOVED HN AVIATION TOWARDS US SAFETY STANDARDS



FUTURE STRATEGIC DIRECTIONS

- DIVERSE TASKINGS
- MULTIPLE-THEATER OPERATIONS
- BUILDING COALITIONS TO MEET ASYMMETRIC THREATS



CHALLENGES

- CONTROLLING THE OPS TEMPO
- MEETING THE DEMAND
- KEY ISSUES
  - UNIT SIZE
  - SCOPE OF OPERATIONS
  - UNIT STRUCTURE



SLIDE TEXT ONLY




UNITED STATES
SPECIAL OPERATIONS COMMAND
AIR FORCE SPECIAL OPERATIONS COMMAND
ANY TIME ANY PLACE
6TH SPECIAL OPS SQ
COMMANDO

Army Special Operations Aviation (ARSOA) Modernization Program

by

Mr. John L. Shipley

AMCOM Director, Special Programs

ARSOA Modernization Program

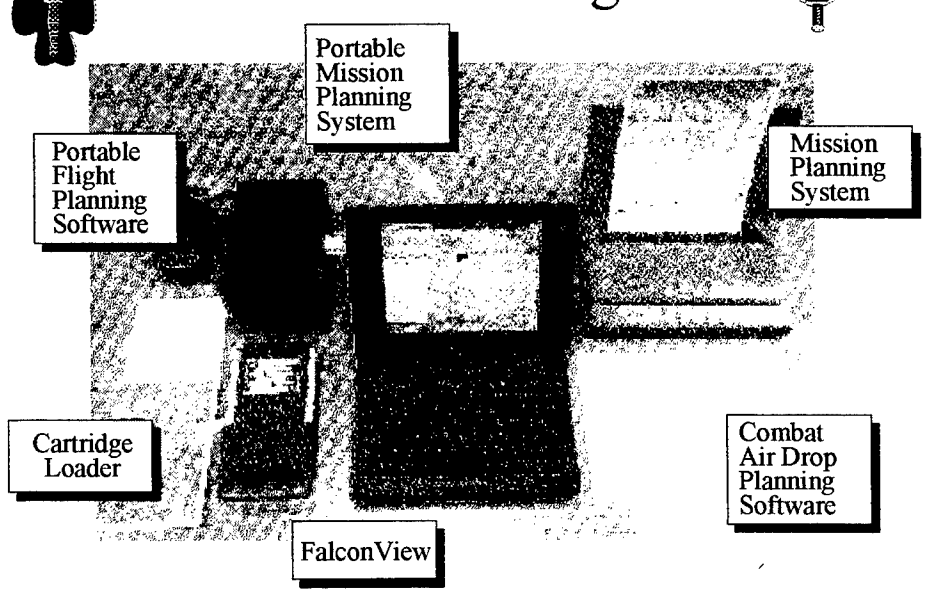
The objective of the ARSOA Modernization Program is to maintain a ready and relevant SOF aviation force well into the new millenium through two thrusts -

- Enhancing the capabilities of the existing fleet to perform evolvoing missions and to counter emerging threats.
- Ensure the safety and sustainability of the existing fleet to exceed operational readiness requirements until the next generation of aircraft are developed and fielded.

Modernization Areas

- Programs applicable to multiple platforms
  - Mission Planning
  - Survivability
  - Sensors
  - Avionics / Navigation
  - Simulation
- Platform specific programs
  - A/MH-6 Little Bird
  - MH-47 Chinook
  - MH-60 Blackhawk

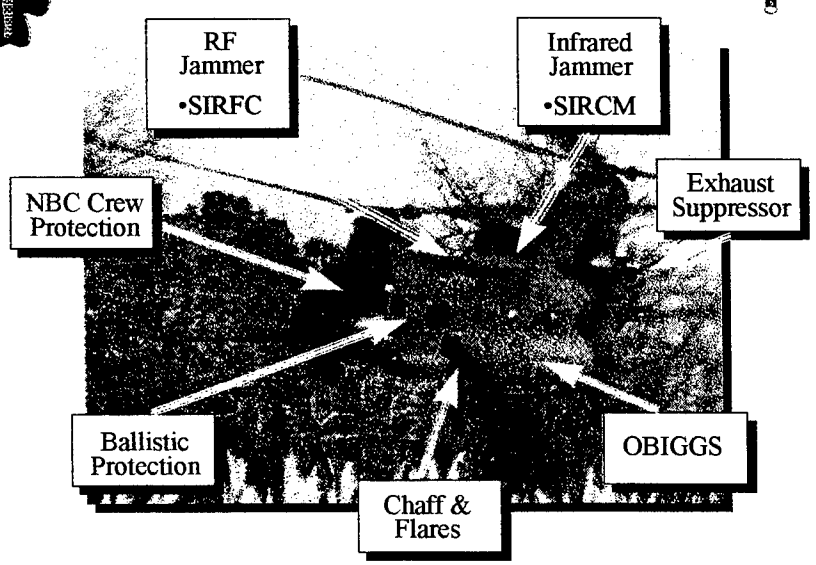
Mission Planning



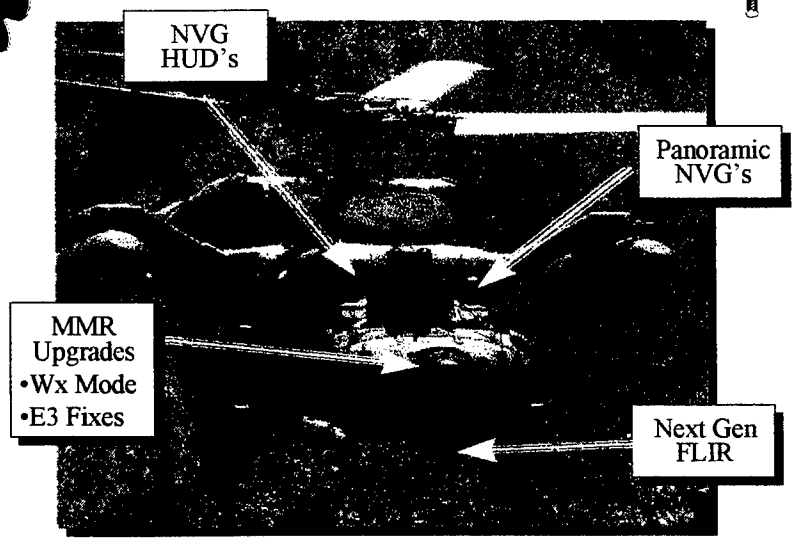
Mission Planning Functions

- Point and drag route planning
- NIMA Standard worldwide maps, DTED and imagery
- Fast, flexible flight planning of complex missions, analysis and rehearsal
- Threat analysis, radar predictions, perspective views, and fly-through
- Full kneeboard card printing and cartridge loading
- Aircraft specific performance planning

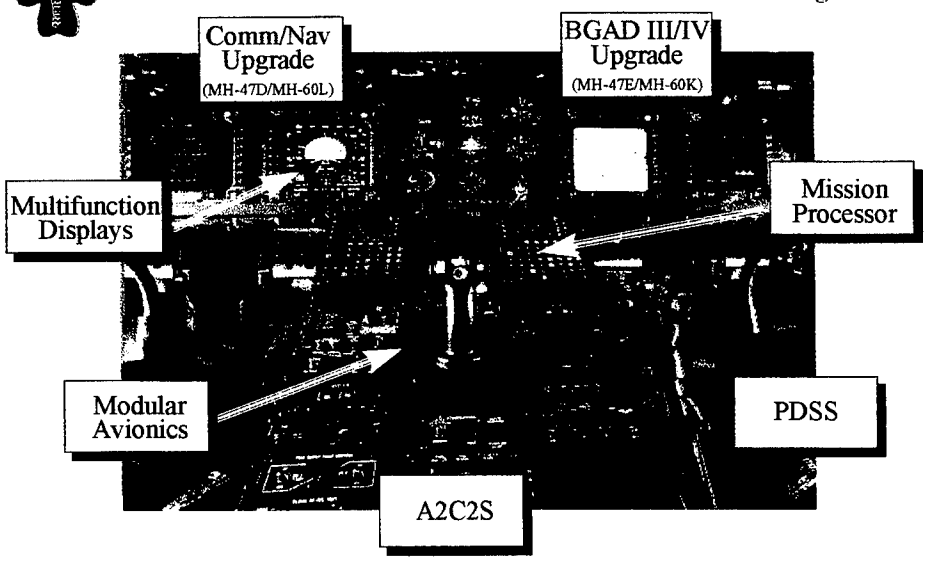
Survivability



Sensors



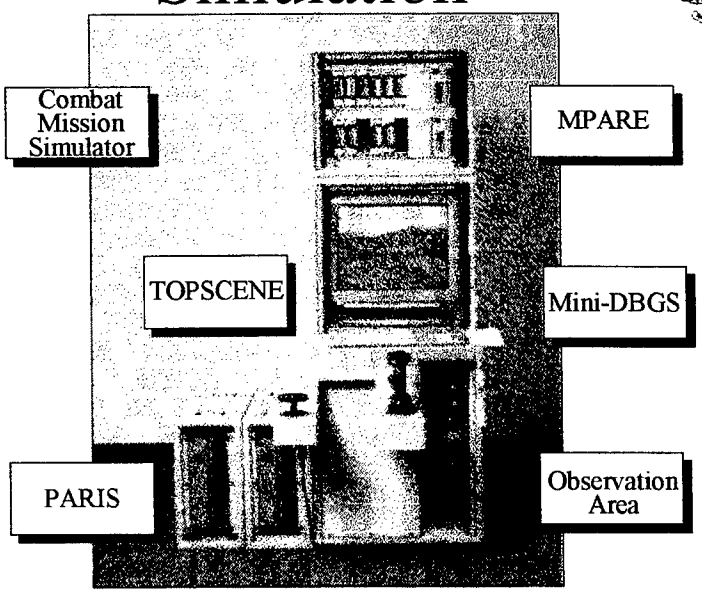
Avionics / Navigation



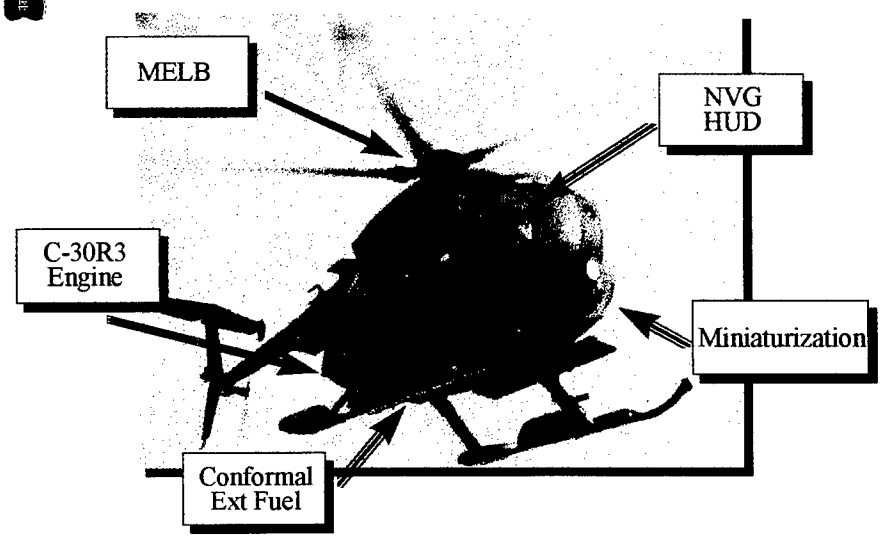
Avionics Upgrades

- MH-47D/MH-60L Comm/Nav Upgrade
  - EGI integration
  - EHSI/EADI relacement
  - Bus control of ARC-210, ARC-201, ARC-164, PLS, ELT
  - ARC-220 installation
  - SLAB Battery
  - ALE-47, AAR-47 and AVR-2A installation
- MH-47E/MH-60K BGAD III/IV Upgrade
  - Digital Map integration
  - EGI integration
  - ARC-220 integration
  - SkyFire installation
  - ASE Engineering Fixes
    - HPRT
    - ITAA
    - FOV Lenses
  - MH-47E E3 Fixes

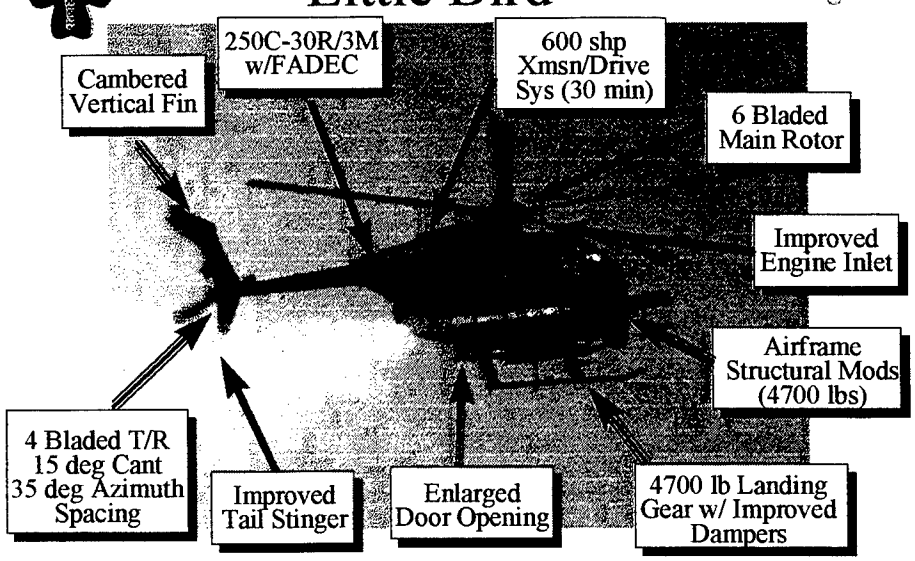
Simulation



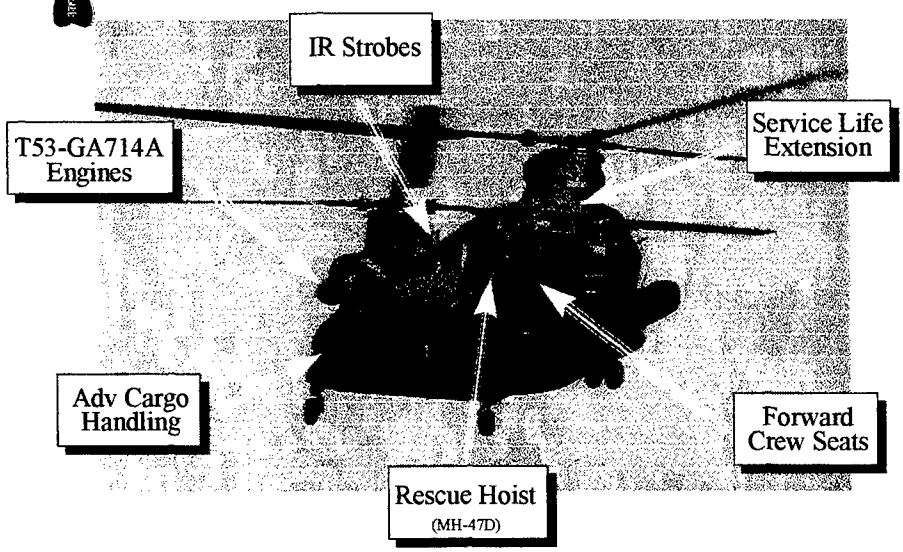
A/MH-6 Little Bird



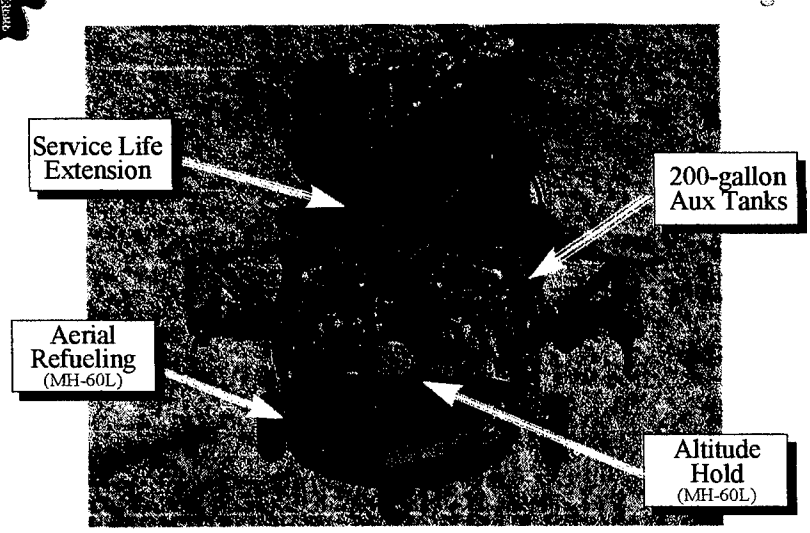
Mission Enhancement Little Bird



MH-47 Chinook



MH-60 Blackhawk



Constraints on Modernization

- Improvement in capability per modernization dollar is diminishing.
- May be approaching the "knee of the curve" in modernization.
- Modification and sustainment of software is too expensive.
- Complex system integration has to be addressed in terms of total life cycle costs.
- O&S costs will continue to control the modernization accounts.

ARSOA Contributions to Army Aviation

- **Low Observable Technology**
- **Armed OH-58 Helicopter**
- **Night Vision Systems Enhancement and New Developments**
- **Ballistic Armor Suppression System**
- **Fast Rope Insertion / Extraction System**
- **Internal Auxiliary Fuel Tanks**
- **External Rescue Hoist**
- **Phototelesis**
- **Weather Radar and Stormscopes**
- **Voice and Altitude Warning System**
- **Strao-on GPS**
- **Improved Cargo Helicopter Engine**
- **Integrated Cockpit**





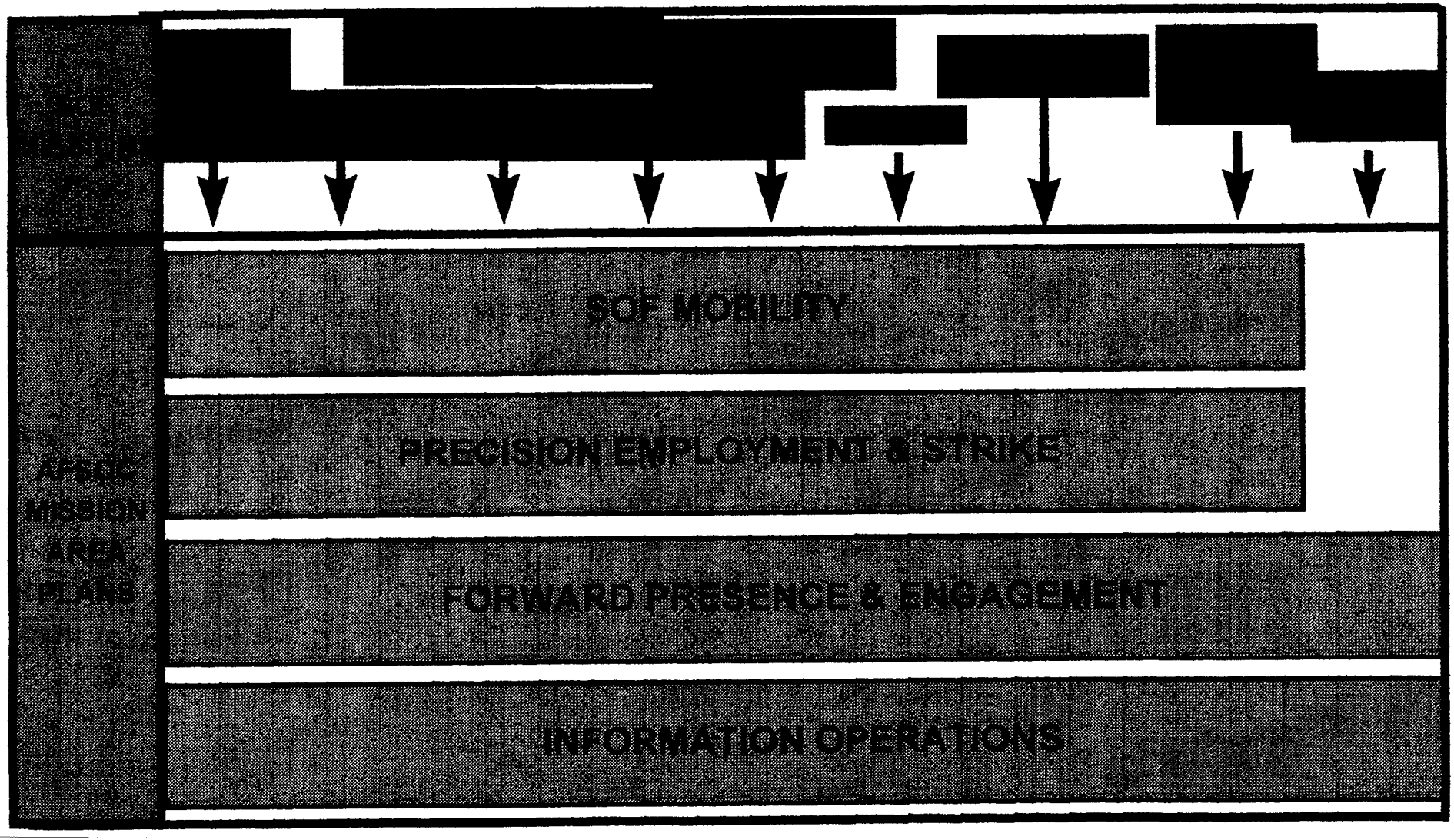
The ARSOA Modernization Program, in concert with outstanding Night Stalker Aviators, Crew Members and Support Personnel, will absolutely ensure ready, responsive and relevant aviation support to the SOF operator of today and tomorrow.

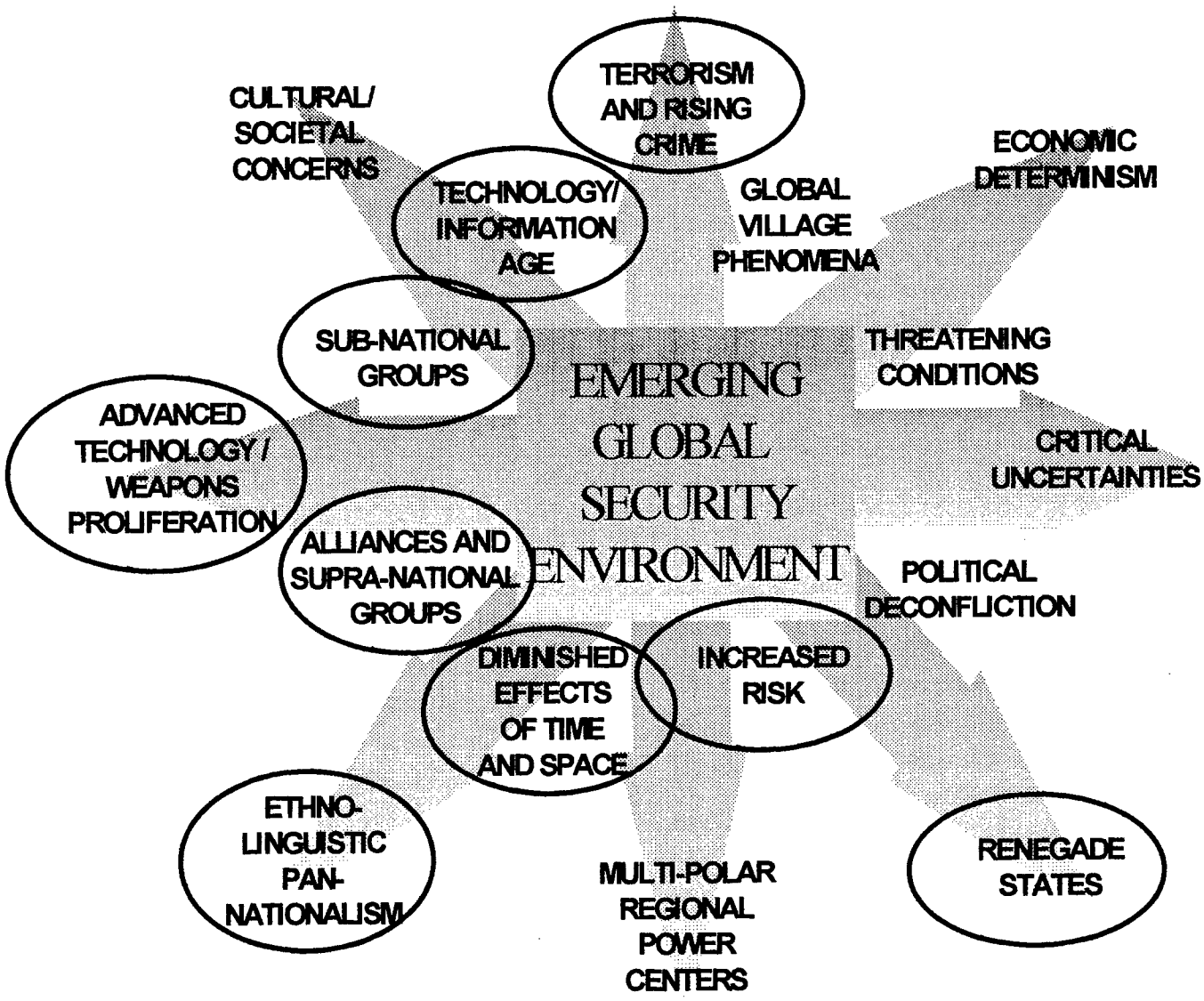
NSDQ

Overview

- AFSOC Missions
- Character of the Environment
- Responses/Options

Current and Probable Future Mission Areas




EMERGING GLOBAL SECURITY ENVIRONMENT
TERRORISM AND RISING CRIME
CULTURAL/ SOCIETAL CONCERNS
TECHNOLOGY/ INFORMATION AGE
GLOBAL VILLAGE PHENOMENA
ECONOMIC DETERMINISM
SUB-NATIONAL GROUPS
THREATENING CONDITIONS
ADVANCED TECHNOLOGY / WEAPONS PROLIFERATION
CRITICAL UNCERTAINTIES
ALLIANCES AND SUPRA-NATIONAL GROUPS
POLITICAL DECONFLICTION
DIMINISHED EFFECTS OF TIME AND SPACE
INCREASED RISK
ETHNO-LINGUISTIC PAN-NATIONALISM
MULTI-POLAR REGIONAL POWER CENTERS
RENEGADE STATES

Summary of "Trends"

Bottom line: a radically changing post CW world

UNPREDICTABLE

CHANGE

UNCERTAINTY

GLOBAL INTERDEPENDENCE

HIGH TECH AVAILABILITY

NON-STATE ACTORS & CAUSES

SMALLER BUDGETS

ENVIRONMENT

Future Challenges

- OPSEC a far greater challenge
  - Commercial satellites/communications/sensors/ INTERNET provide adversaries enhanced intel tools
  - CNN factor
- Enemies learn too!
  - Employ movement, concealment & deception
  - Increasing trend to urban street-fighter tactics
  - Proliferation of MANPADs and other air defense systems complicate response
- Urban ops magnify above challenges
  - "Guerrillas are like fish that swim in the sea."

--Mao Tse Tung

Response to Challenges

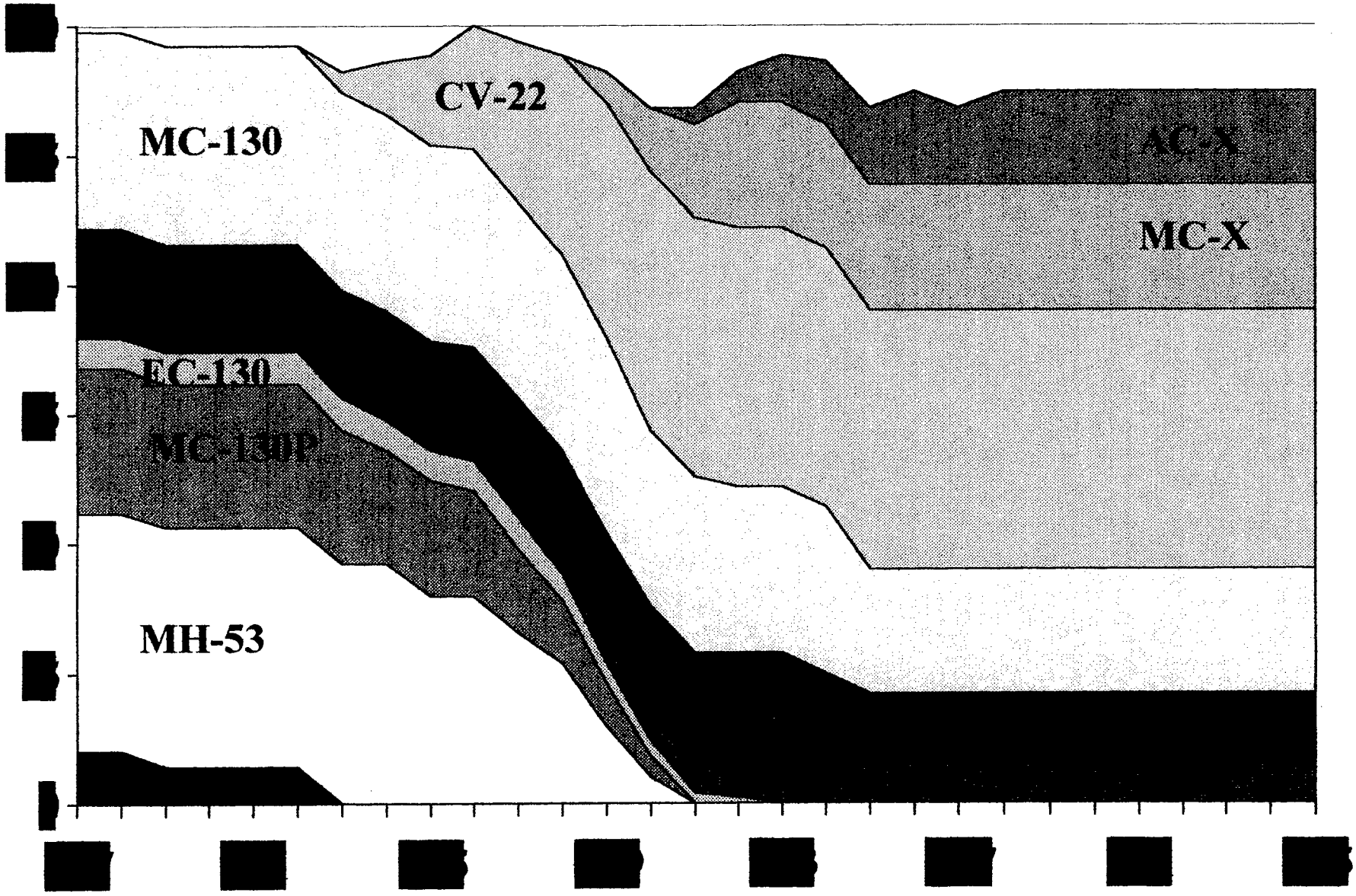
- Find 'Em
  - Increased reliance upon HUMINT
  - Exploit classic Strategic Reconnaissance
  - UAV technology
- Hit 'Em Hard, Hit 'Em Fast ($F^2T^2E^*$)
  - Speed, Range, Survivability, Reduced Detection, VTOL
    - Reduce trainup rehearsal time through joint high fidelity mission rehearsal systems
  - Gunships & tailored conventional forces
    - improved lethal/nonlethal options

(*Find, Fix, Target, Track, and Engage….USAF Long Range Thrust Area)

Transnational Threats require Transnational Responses...

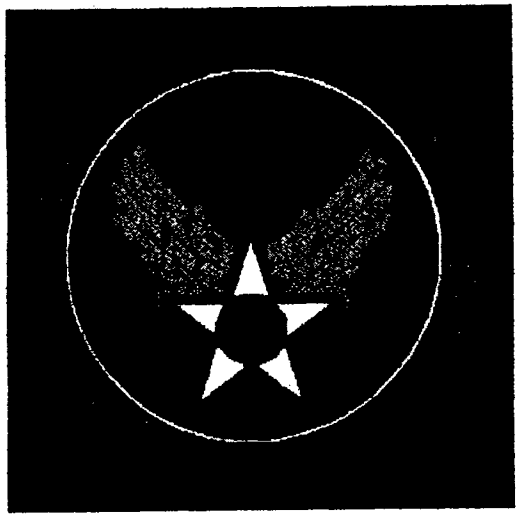
- Define role for SOF within IO...physical attack, exploitation, deception, and PSYOP?
- Expand cross-cultural expertise orientation?
  - Urban Operations--Unique weapons/sensors/C4ISR (IO?)
- Future focus on SOF skills that support peacetime engagement strategy? (train, advise, assist, assess)
  - Transition to/from coalition support activities throughout the spectrum of conflict
- Multi-agency/multi-national, industry, & *military* response? (effective org, doctrine, opsec?)
  - Recruiting best and brightest from IBM to CDC for meeting the threat (NGO, PVO)

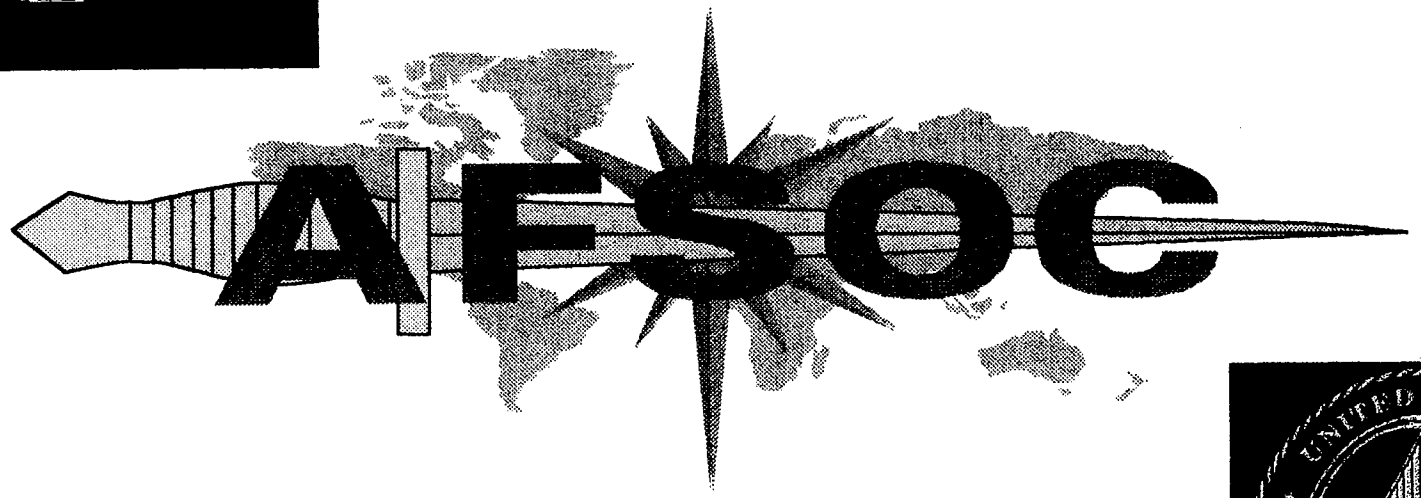
Long Range Planning View

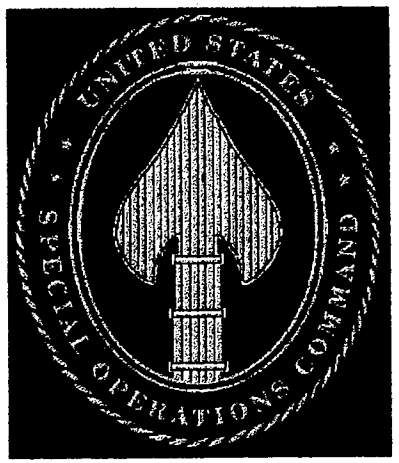


What does future hold for SOF?

- Speed/Range *more* critical
- LO/IO required for survivability and to ensure element of surprise at objective area
- Urban environment dictates "selectable" lethality, range of intel, and unusual skill sets including language
- Can't wait 6 mos to do an EAGLE CLAW or Son Tay prison raid in 2025…
- 72 hour planning cycle STILL TOO LONG!




AFSOC


UNITED STATES
SPECIAL OPERATIONS COMMAND

BELL BOEING

The Tiltrotor Team

A JOINT SERVICE PROGRAM



NEW TECHNOLOGIES for NEW AIRPLANES

AC-130U and CV-22 in the 21st Century

BOEING

AC-130U Mission

Provide:

Precision strike at night, under all weather conditions with minimal collateral damage and extended combat persistence

- ***Close air support***
- Armed Recce
- Interdiction
- Search and Rescue
- Command and Control
- Forward Air Control

AC-130U Status

- All 13 Aircraft Delivered and Operational with 4th SOS at Hurlburt Field, FL
  - Recently set C-130 non-stop flight record in deployment from Hurlburt to Korea
  - Deployed to Bosnia in support of NATO forces
- Gunship peculiar sub-system exceeding reliability predictions
-

AC-130U Capabilities

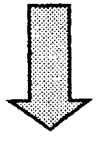
- APQ-180 Radar provides all-weather precision attack capability
- Fire Control enhancements provide dual target attack capability
- Enhanced situational awareness for all crew members
  - Reduced probability of fratricide
  - Enhanced survivability
  - Improved crew coordination/reduced workload
- All Light Level Television incorporates laser designator compatible with all modern laser guided munitions

AC-130U Near Term Improvements

- Increased radar resolution
  - Capture upgrades to F-15E radar
- Improved Fire Control Algorithms
  - Eliminate need to orbit target
  - Increased Stand-off range
  - Improved first shot accuracy
- Improved IFF
  - CSEL
  - Improved radar beacons
- Enhanced defensive systems
  - Low-Band jammer
  - DIRCM

AC-130U Near Term Improvements (cont.)

- Drag Reduction
- Non-lethal munitions for existing weapons
- GATM/GANS
- Reduction in Logistics Tail
- Enhanced Situational Awareness
  - Real Time in Cockpit
  - Transmission of gunship video to ground stations
    - Real time intel for individual soldier
-



"Put the Foxhole in the Cockpit"

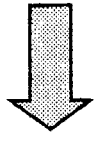
AC-130U Far Term Enhancements

- Advanced Weapons
  - Directed Energy Weapons
    - Microwave
    - ABL based technologies
  - Kinetic Energy Weapons
  - Non-lethal technologies
- Integration with UAV/RPV systems
- Exploitation of Spaced Based Systems
  - Targeting
  - Weapon Guidance
- Air Vehicle performance improvements
  - Signature
  - Powerplant

–

AC-130U Far Term Enhancements

- Advanced Sensors
  - MM Wave
  - Ultra High Resolution SAR
  - Automatic Target Recognition
    - Sensor Fusion
-
-
-



"Put the Cockpit in the Foxhole"

CV-22 Mission

Provide:

VTOL, Speed, Range, Flexibility and Survivability to support SOF Operations Deep Within Hostile Territory

- ***Long range infil/exfil/resupply***
- Combat search and rescue
- Logistics support
- MEDEVAC

CV-22 Status

EMD Program on schedule

Air vehicle CDR scheduled for Sept 1998

Two EMD aircraft modified for CV-22 development

A/C #7 and #9

OPEVAL 2002

First procurement 2001

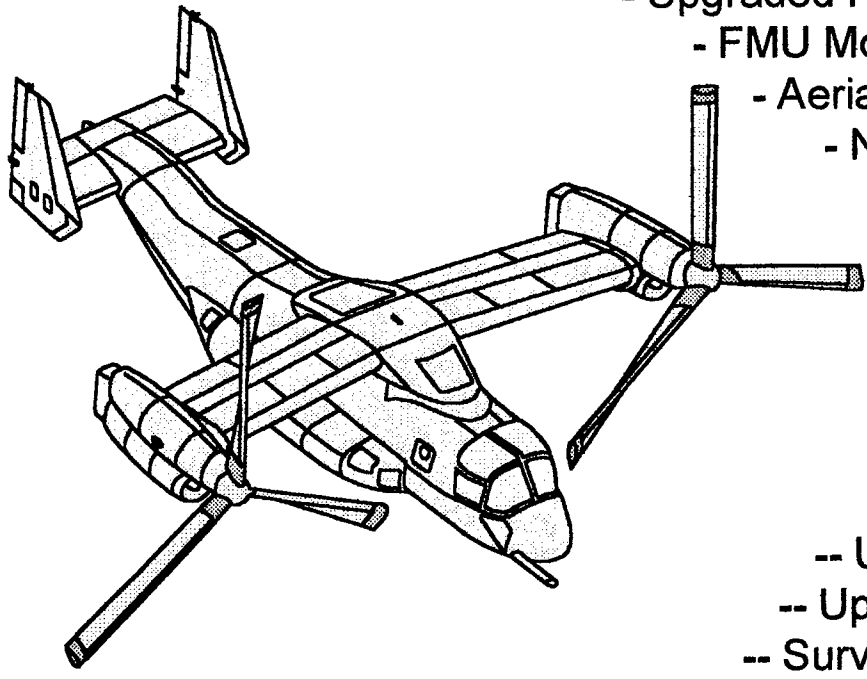
First delivery 2003

Below cost, on schedule

V-22 Configurations

MV-22:

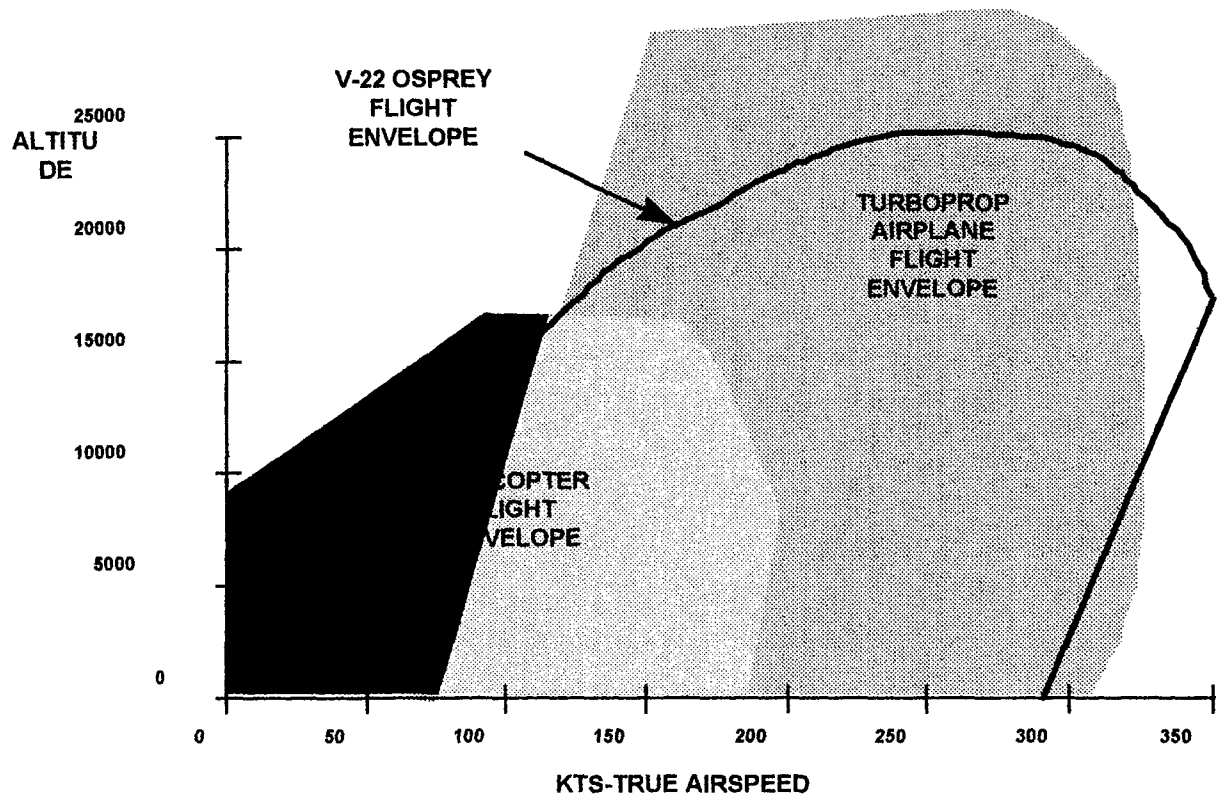
- 24 seats
- 6x6x24' cabin
- 1125 gal. fuel
- Fast rope
- Rescue Hoist
- NBC Protection
- Prov. for Nose Gun
- Triply redundant flt. cntls
- Anti- & De-icing
- Dual Ext. Cargo Hooks
- Avionics:
  - -- Dual 1553B Data Bus
  - -- Dual Msn Computers
  - -- INS / GPS
  - -- FLIR
  - -- Digital Map
  - -- 2 ARC-210 UHF/VHF radios
  - -- Radar Warning Rcvr
  - -- Missile Warning Rcvr
  - -- Laser Warning Rcvr
  - -- 60 rnds Flare/Chaff



CV-22 = MV+:

- 900 gal. added internal fuel
- Cabin Aux Fuel Tank
- Upgraded FE Seat
- FMU Modifications
- Aerial Refuel Probe
- NBC Suit Connections
- Avionics:
  - -- TF/TA Radar
  - -- Radar Jammer
  - -- MATT
  - -- 4 DCS2000 UHF/VHF radios w/SATCOM
  - -- Upgraded AMC
  - -- Upgraded Dig Map
  - -- Survivor Locator
  - -- Radar Warning Display
  - -- Crash Position Indicator
  - -- Upgraded IFF
  - -- 90 add'l rnds Flare/Chaff

CV-22 Performance



TWICE AS FAST AS
A HELICOPTER

CV-22 New Technologies & Variants

- CV-22 New Technologies
  - Signature Reduction
  - Smart Blade Technology
  - Cabin Ballistic Blankets
-
  - Variants
    - Combat Search and Rescue
    - Tactical Refueling
-

CV-22 Paradigm Shift

- The full scope of tiltrotor operational capabilities has yet to be explored
  - VTOL
  - 2 X Speed
  - 3 X Range
  - 3 to 50 X More Survivable
  - Expanded Battle Space Awareness
  - Self Deployable
  - Reduced Logistics Footprint

Yields unprecedented capabilities
"A new way to fly...and to fight"

Gunship Paradigm Shifts

- Cannot continue to fight gunships as we have in the past
  - Take advantage of increased situational awareness
  - Exploit fire control capabilities
  - Redefine crew taskings
- Need to further integrate gunship capabilities into the joint war-fighting force
  - Exploit sensor imagery in real time
  - Expand force multiplier capabilities
-
-

CV-22 Paradigm Shift

- The full scope of tiltrotor operational capabilities has yet to be explored
  - VTOL
  - 2 X Speed
  - 3 X Range
  - 3 to 50 X More Survivable
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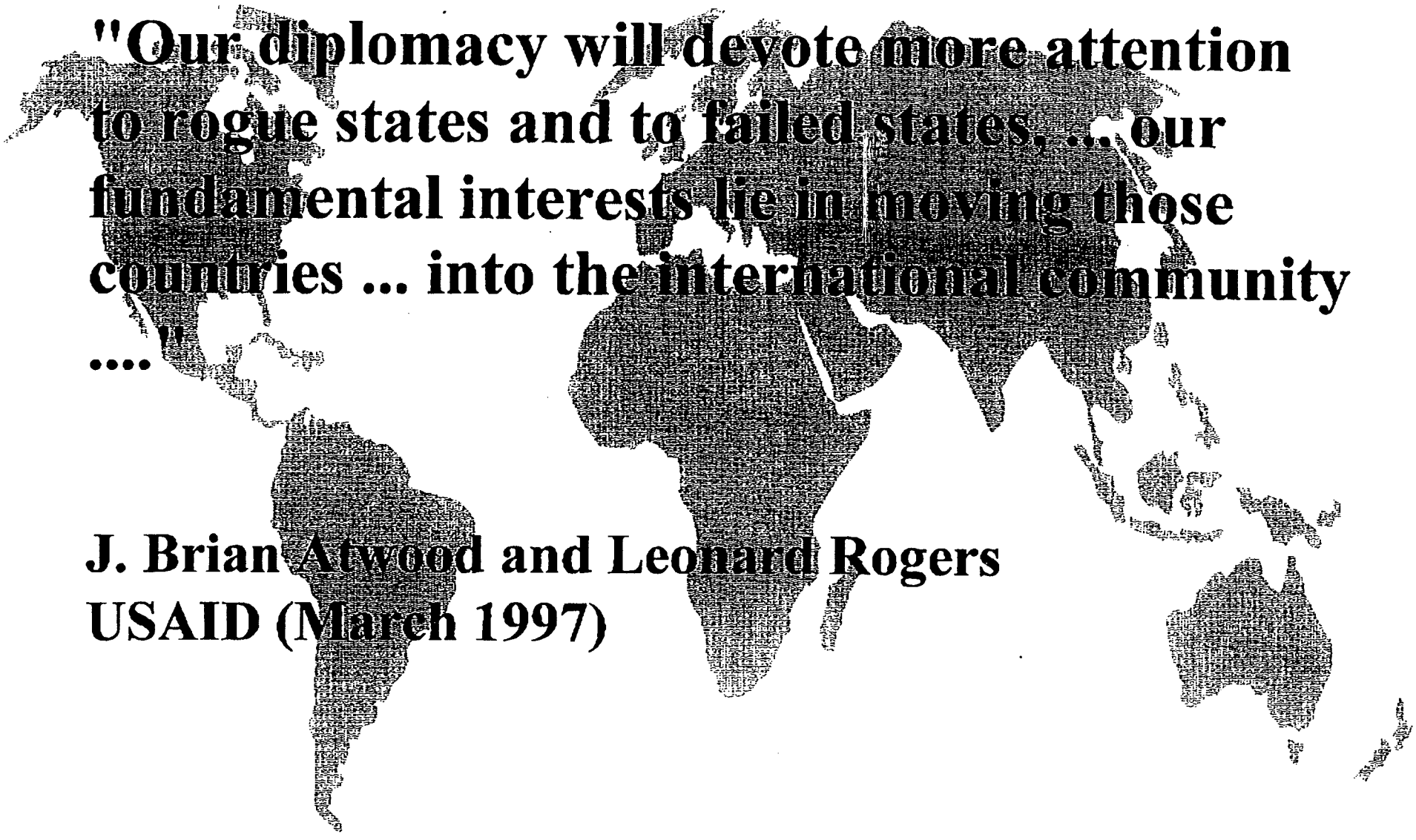
Yields unprecedented capabilities
"A new way to fly…and to fight"

OFFICE OF TRANSITION INITIATIVES

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Dr. Johanna Mendelson Foreman
Senior Advisor

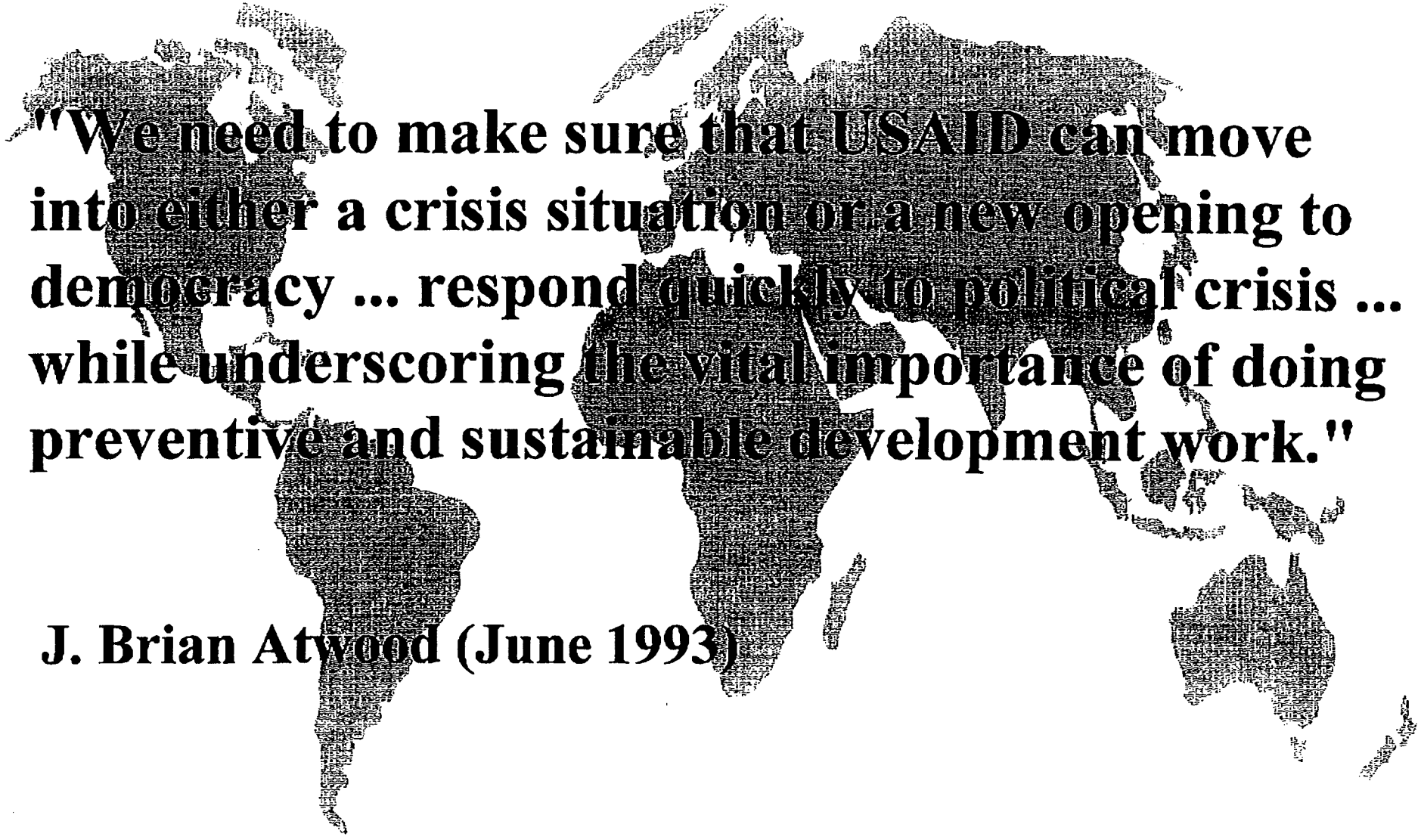
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"Our diplomacy will devote more attention to rogue states and to failed states, ... our fundamental interests lie in moving those countries ... into the international community ...."

J. Brian Atwood and Leonard Rogers
USAID (March 1997)

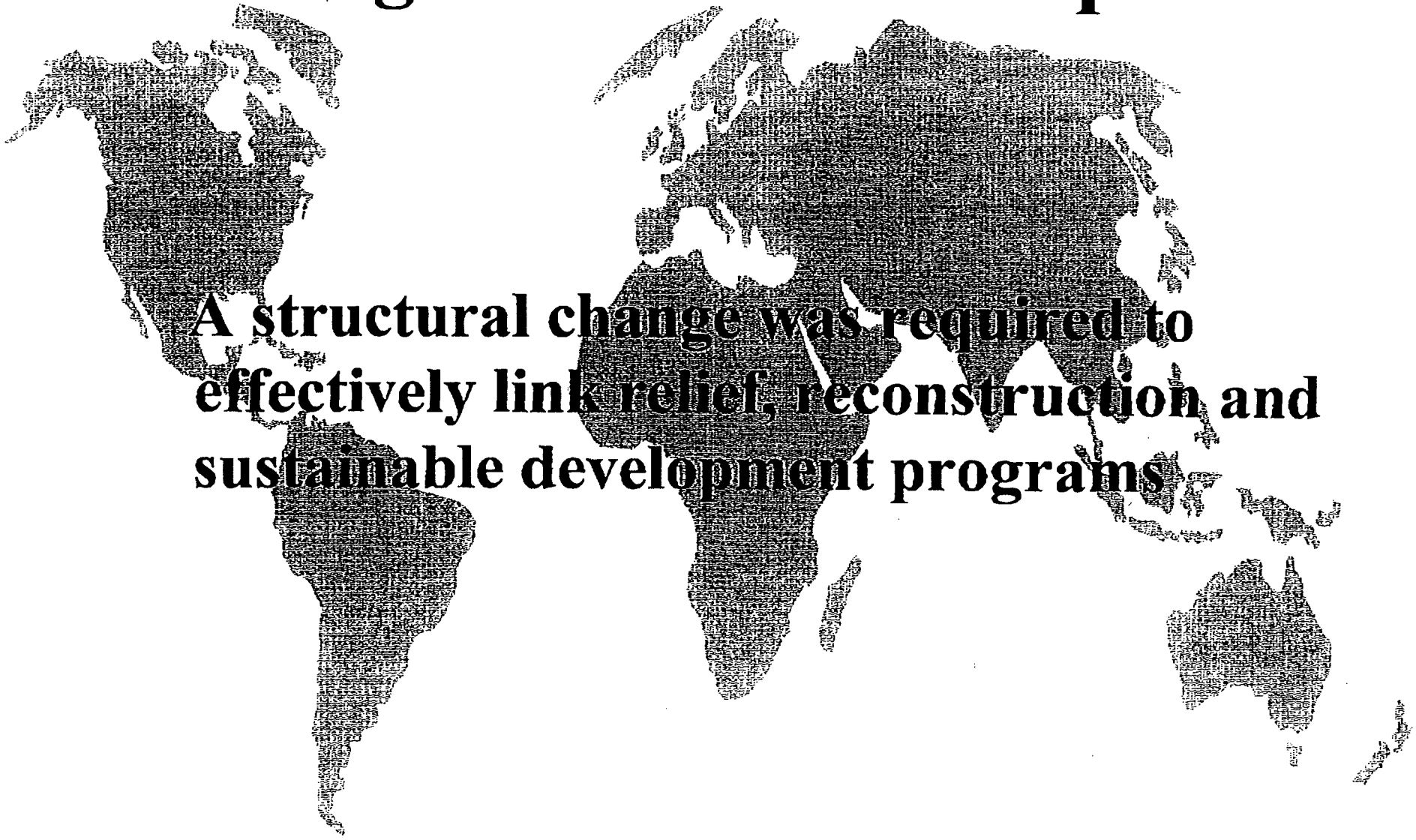
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"We need to make sure that USAID can move into either a crisis situation or a new opening to democracy ... respond quickly to political crisis ... while underscoring the vital importance of doing preventive and sustainable development work."

J. Brian Atwood (June 1993)

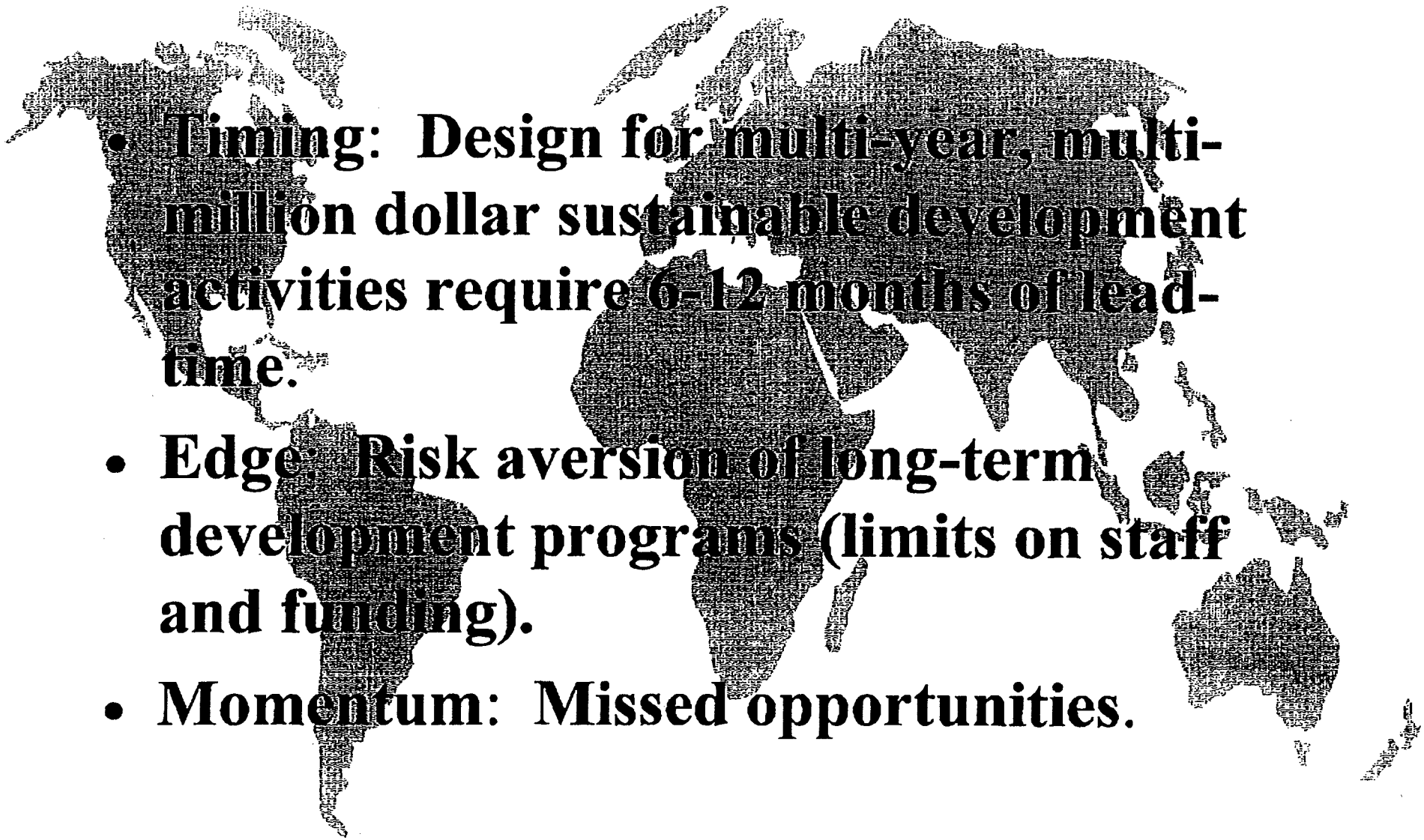
Linking Relief To Development



A structural change was required to effectively link relief, reconstruction and sustainable development programs

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Why?



- **Timing: Design for multi-year, multi-million dollar sustainable development activities require 6-12 months of lead-time.**
- **Edge: Risk aversion of long-term development programs (limits on staff and funding).**
- **Momentum: Missed opportunities.**

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USAID Strategic Objectives: Where OTI Fits



Agency Goal 1

- **Build sustainable democracies.**

Agency Goal 2

- **Create broad-based economic growth.**

Agency Goal 5

- **Save lives, reduce suffering;**
- **Reinforce potential development opportunities;**
- **Establish basic institutions;**
- **Enhance local security;**
- **Strengthen local governance and institutions; and**
- **Rehabilitate critical infrastructure.**

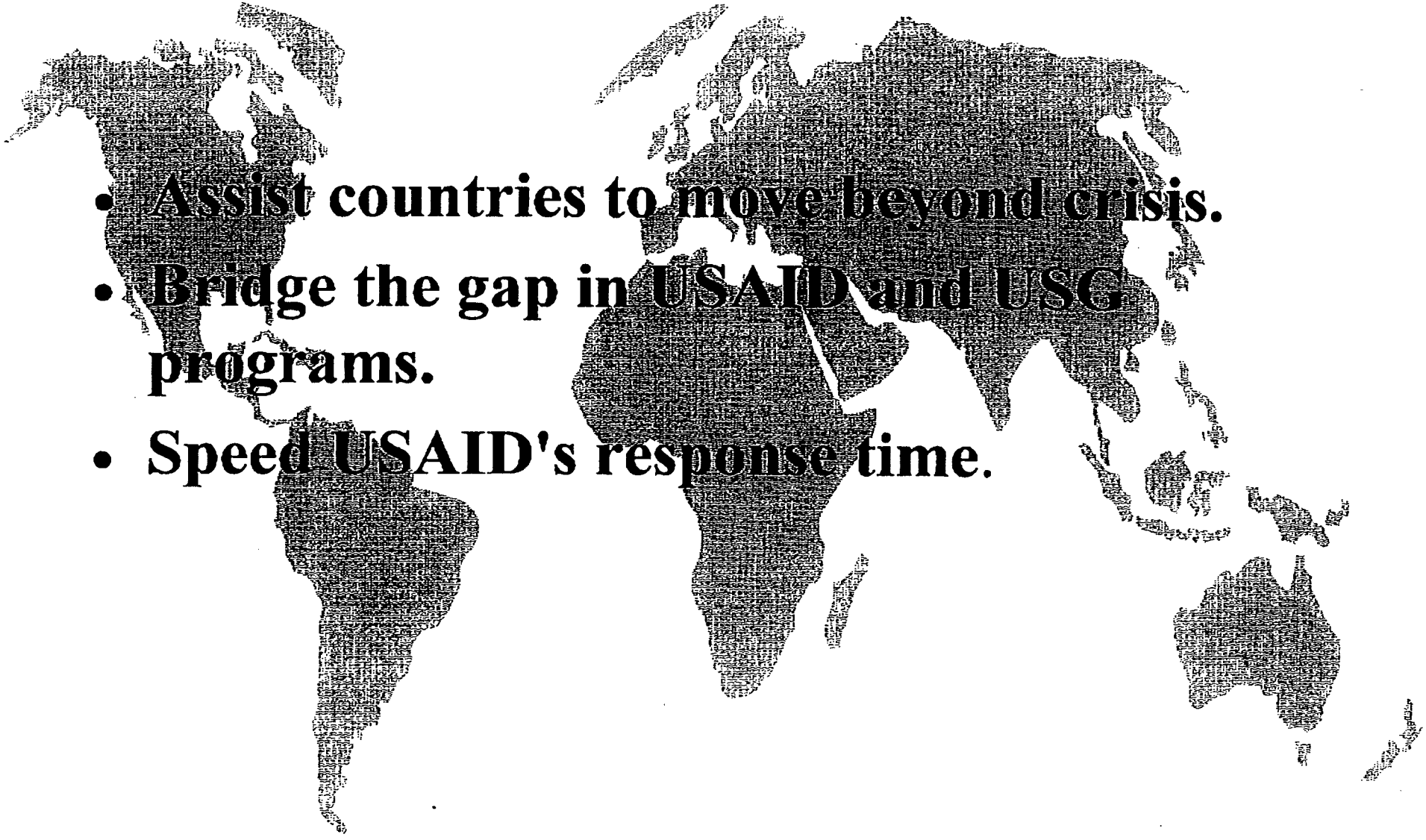
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OTI Mandate



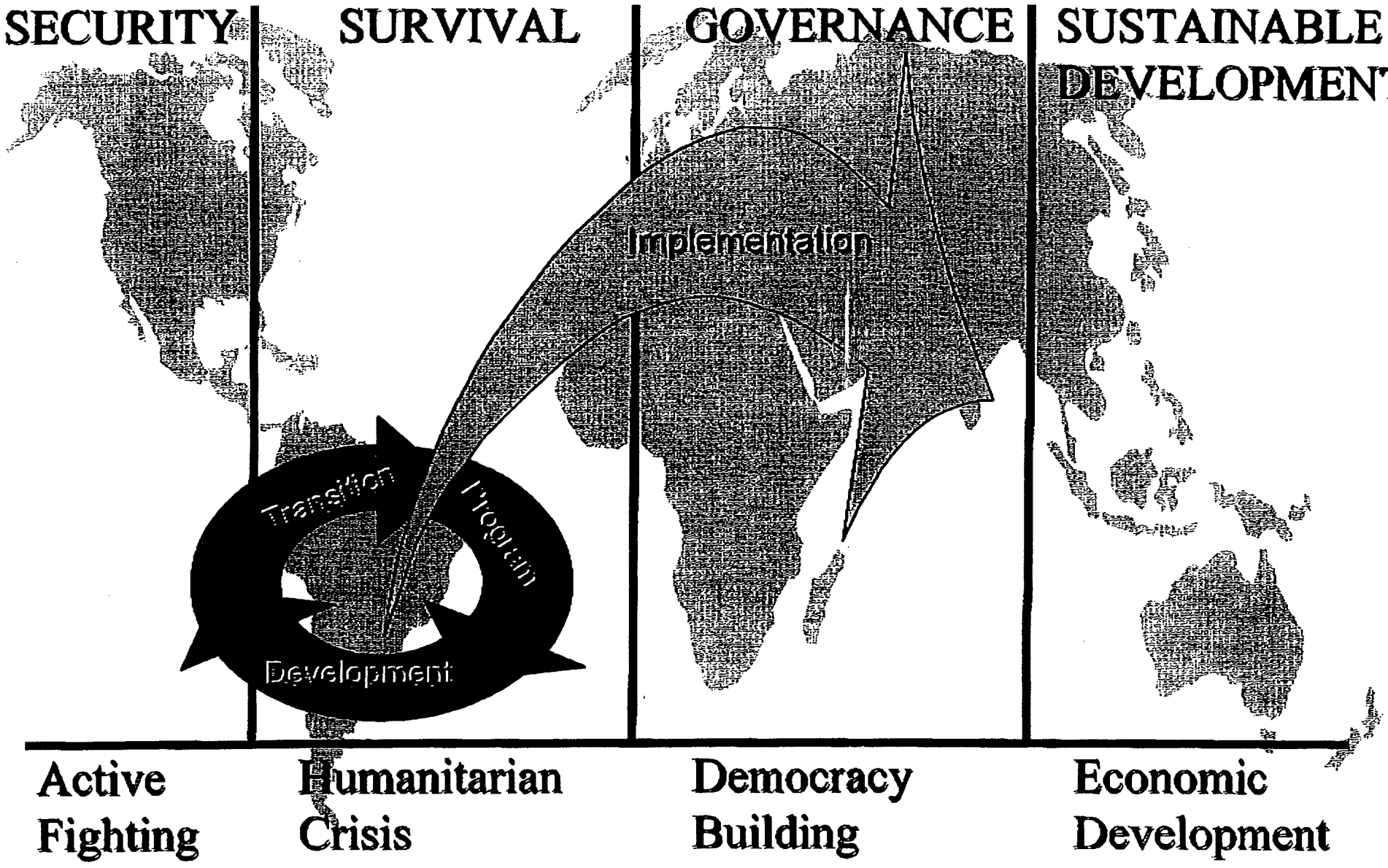
To bring fast, direct and overt political development assistance to the acute needs of priority nations emerging from political, economic and/or social distress.

Operating Assumptions

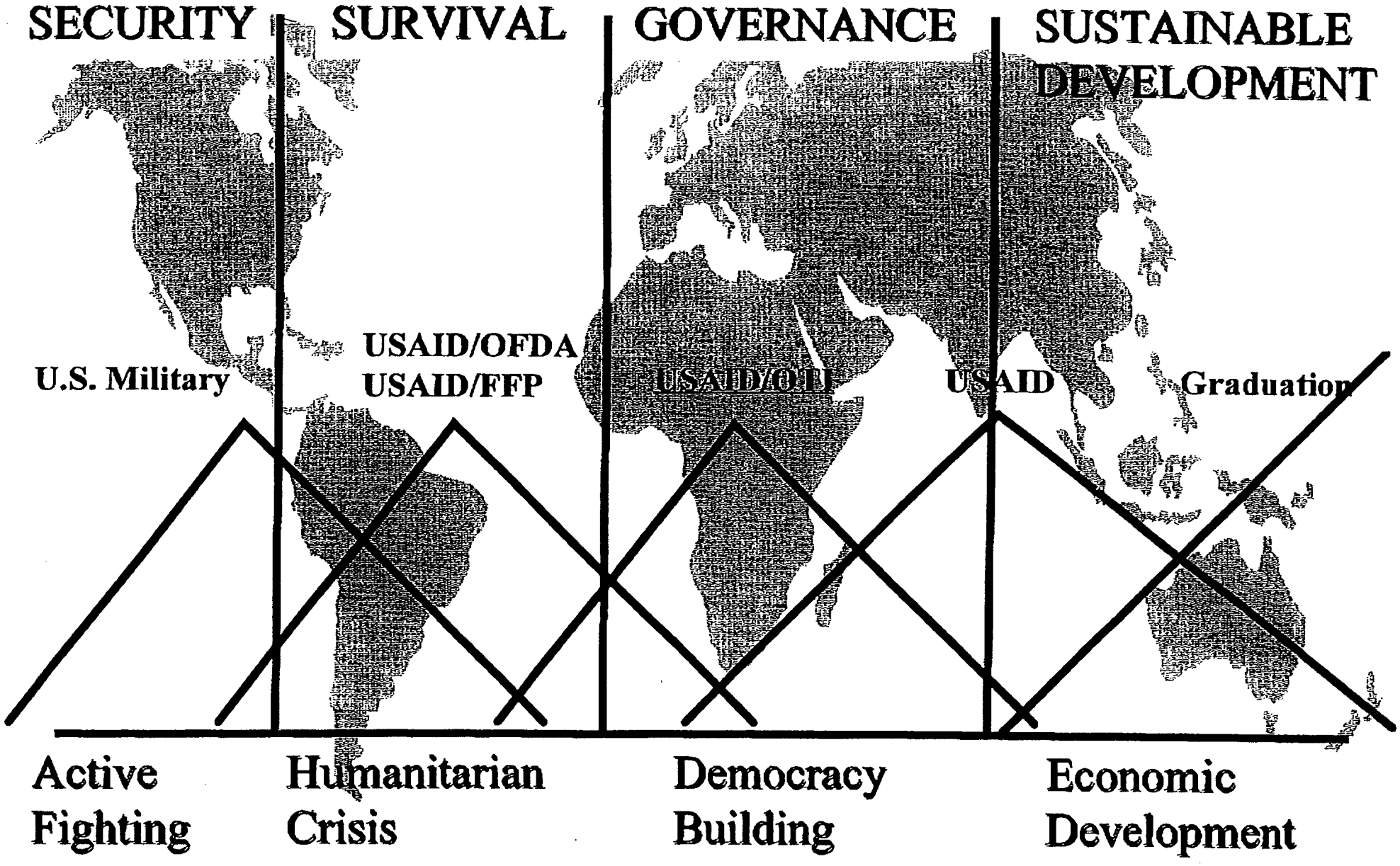


- Assist countries to move beyond crisis.
- Bridge the gap in USAID and USG programs.
- Speed USAID's response time.

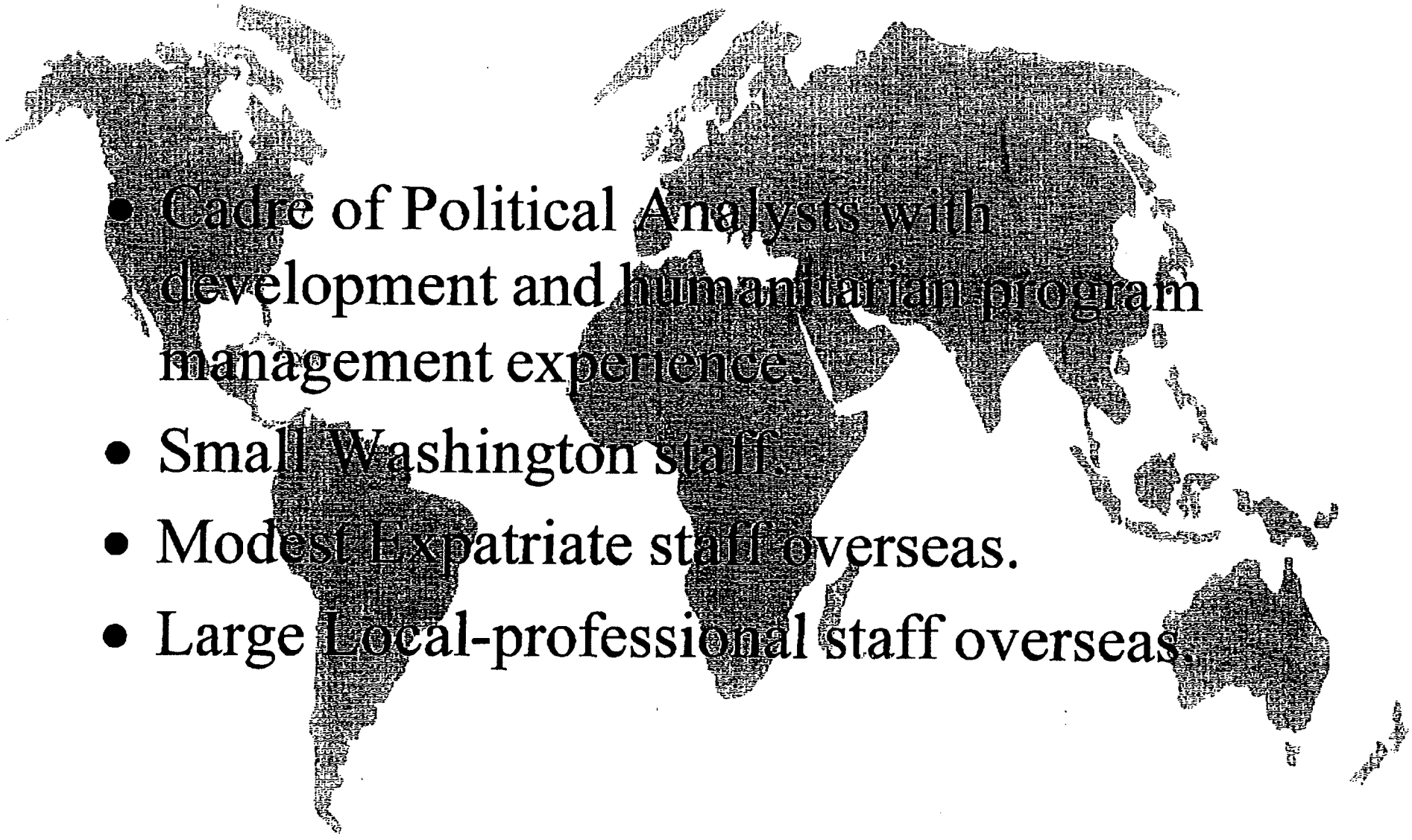
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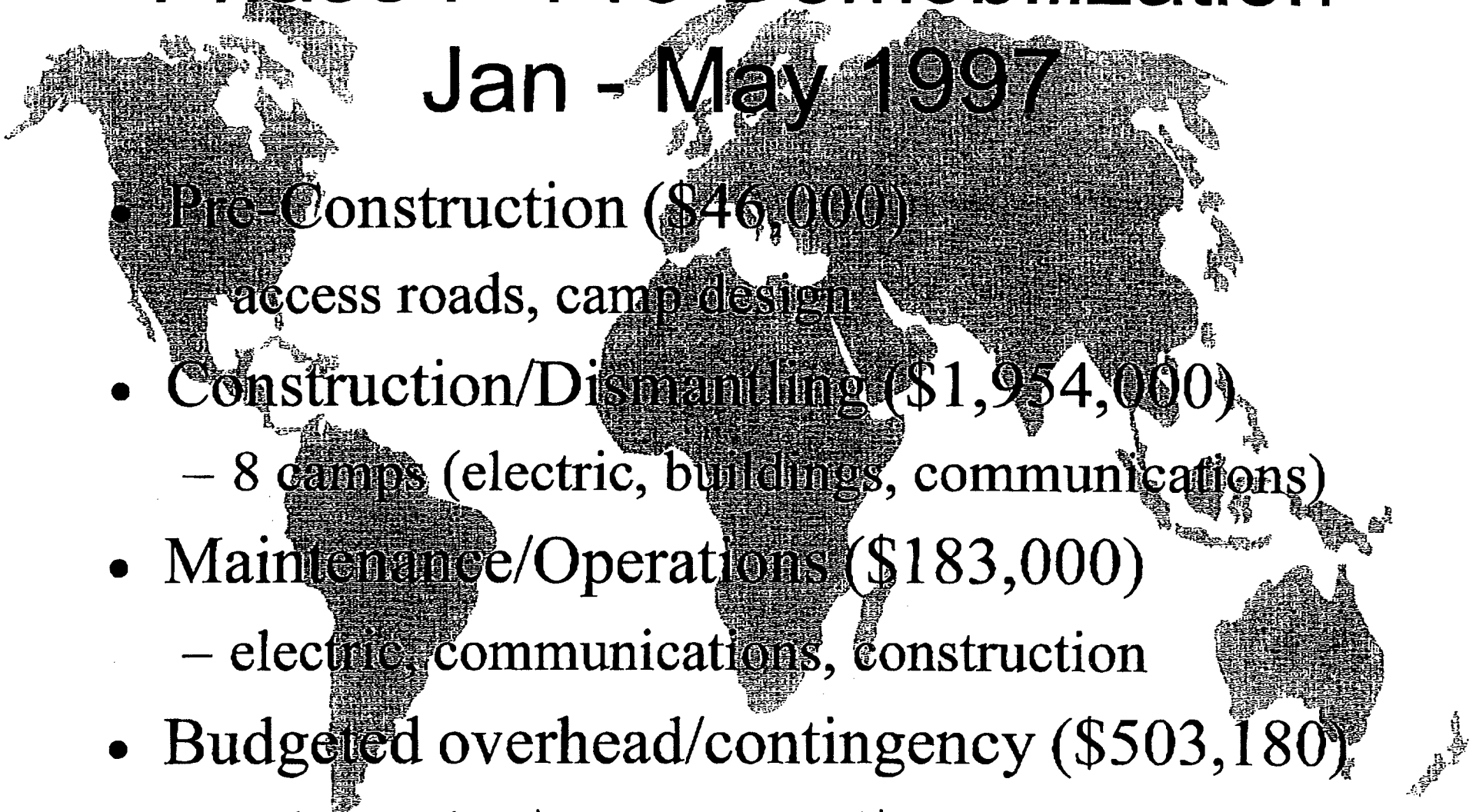
Build A Team



- Cadre of Political Analysts with development and humanitarian program management experience.
- Small Washington staff.
- Modest Expatriate staff overseas.
- Large Local-professional staff overseas.

202 216 3406 P.12/13

Phase I - Pre-Demobilization
Jan - May 1997



- Pre-Construction ($46,000)
  - access roads, camp design
- Construction/Dismantling ($1,954,000)
  - 8 camps (electric, buildings, communications)
- Maintenance/Operations ($183,000)
  - electric, communications, construction
- Budgeted overhead/contingency ($503,180)
- Total Funds: $2,686,180 ($1,343,090 - OTI, 1,343,090 - UNDP)

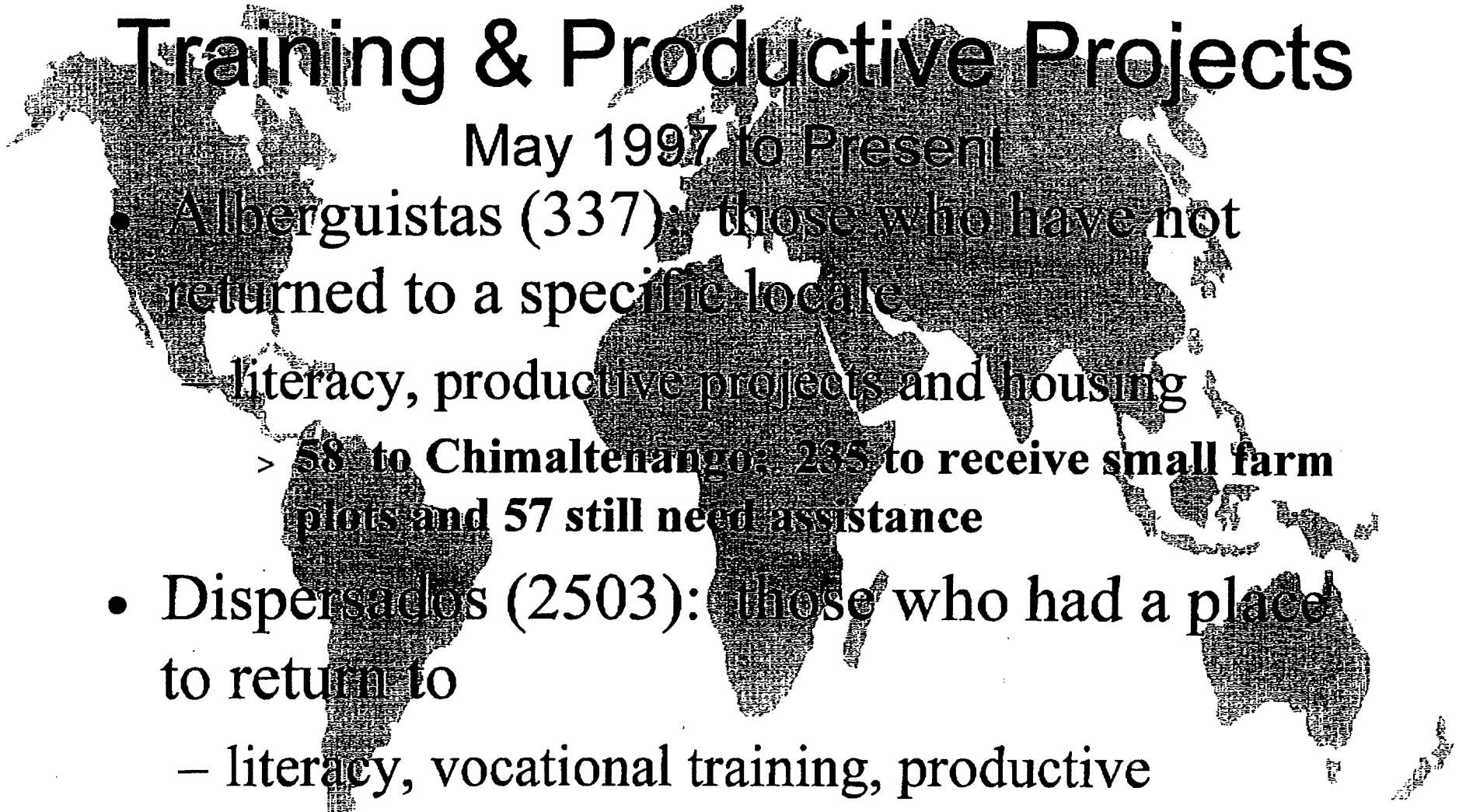
JAN-30-1998 15:44 BHRO/OTI

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TOTAL P.13

Phase II - Demobilization Training & Productive Projects

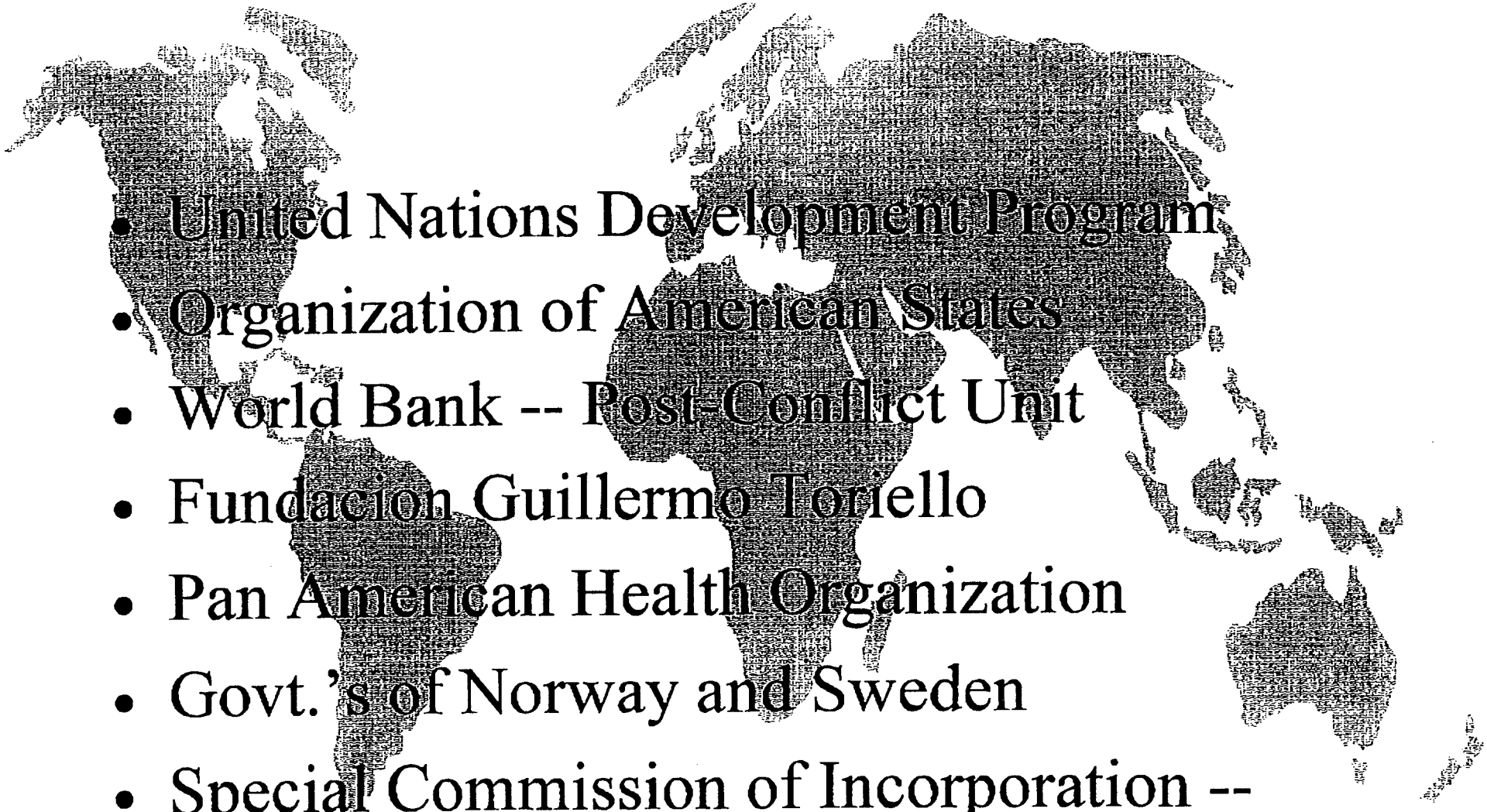
May 1997 to Present



- Alberguistas (337): those who have not returned to a specific locale
  - literacy, productive projects and housing
    - **58 to Chimaltenango; 235 to receive small farm plots and 57 still need assistance**
- Dispersados (2503): those who had a place to return to
  - literacy, vocational training, productive projects, land and housing

JAN-30-1998 15:48 BHRO/OTI 202 216 3406 P.02/05

Other Partners: USAID/OTI



- United Nations Development Program
- Organization of American States
- World Bank -- Post-Conflict Unit
- Fundacion Guillermo Toriello
- Pan American Health Organization
- Govt.'s of Norway and Sweden
- Special Commission of Incorporation -- Govt. of Guatemala

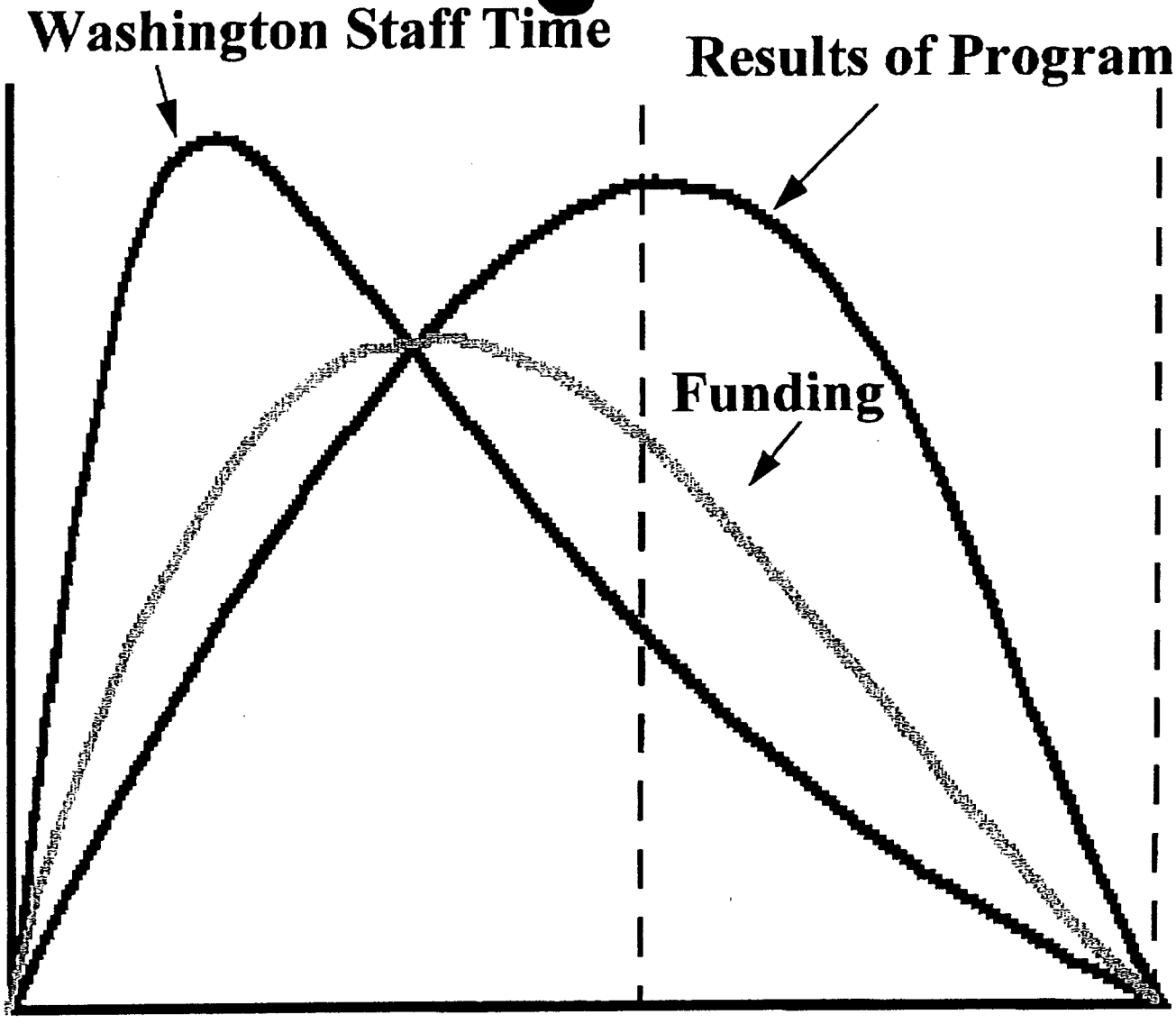
OTI's Workforce Ratios

(FY1994 - 1997)

Staffing Pattern/Washington

- Foreign Service - 3 (1 vacant)
- Civil Service - 4 (1 vacant)
- Personal Service Contractors - 11

OTI Program Involvement





JAN-30-1998 16:17 BHRO/OTI 202 216 3406 P.02/13

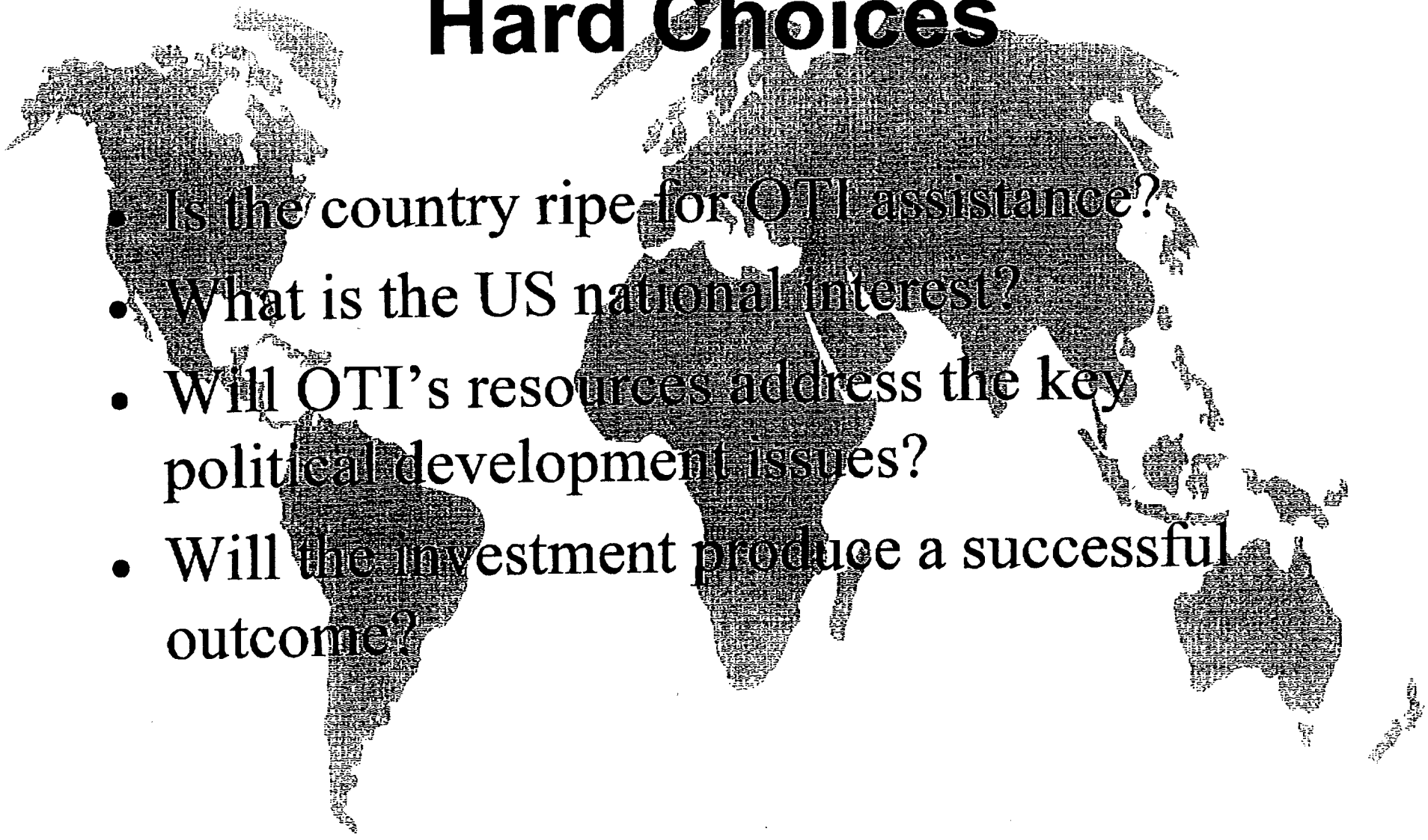
Rules For Catalytic Operations



- Make Hard Choices for Country Selection
- Unique and Tailored Implementation Systems
- Ensure Direct USAID Involvement
- Identify Strategic Political Activities
- Leverage Funding
- Ensure Collaboration

JAN-30-1998 16:18 BHRO/OTI 202 216 3406 P.03/13

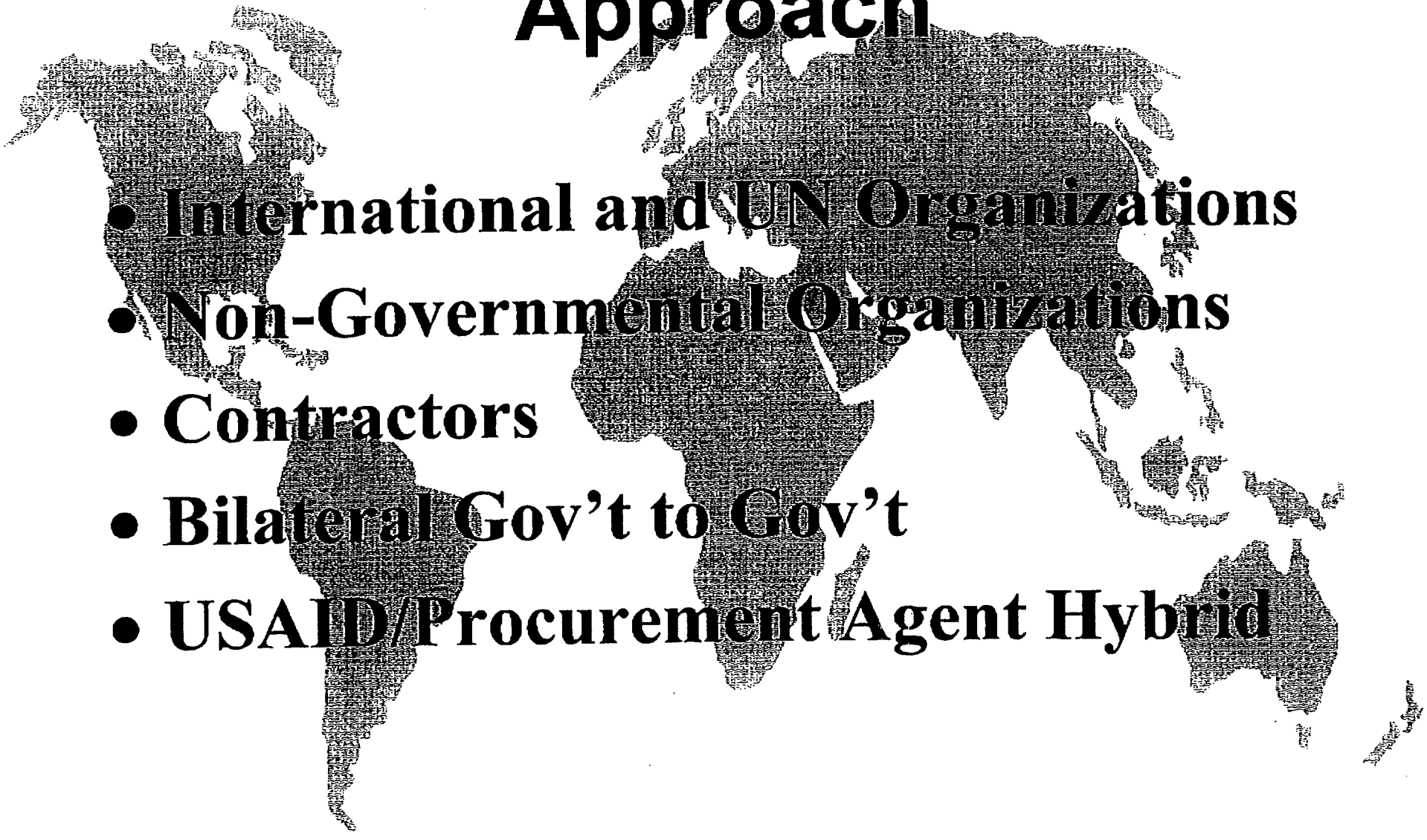
Country Selection: Hard Choices



- Is the country ripe for OTI assistance?
- What is the US national interest?
- Will OTI's resources address the key political development issues?
- Will the investment produce a successful outcome?

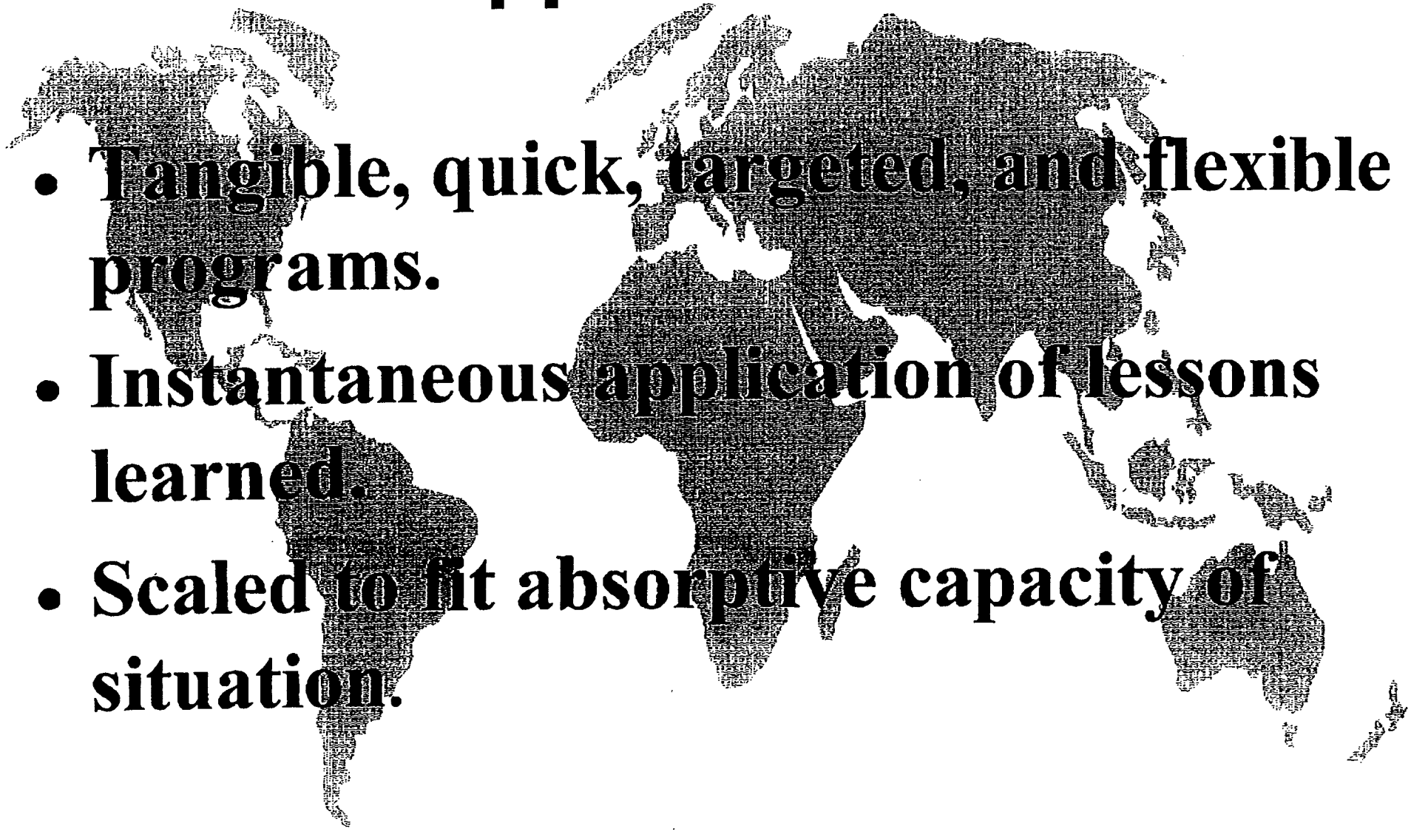
JAN-30-1998 16:20 BHRO/OTI 202 216 3406 P.04/13

Unique And Tailored Approach



- International and UN Organizations
- Non-Governmental Organizations
- Contractors
- Bilateral Gov't to Gov't
- USAID/Procurement Agent Hybrid

Each Approach Allowed



- **Tangible, quick, targeted, and flexible programs.**
- **Instantaneous application of lessons learned.**
- **Scaled to fit absorptive capacity of situation.**

JAN-30-1998 16:22 BHRD/OTI 202 216 3406 P.06/13

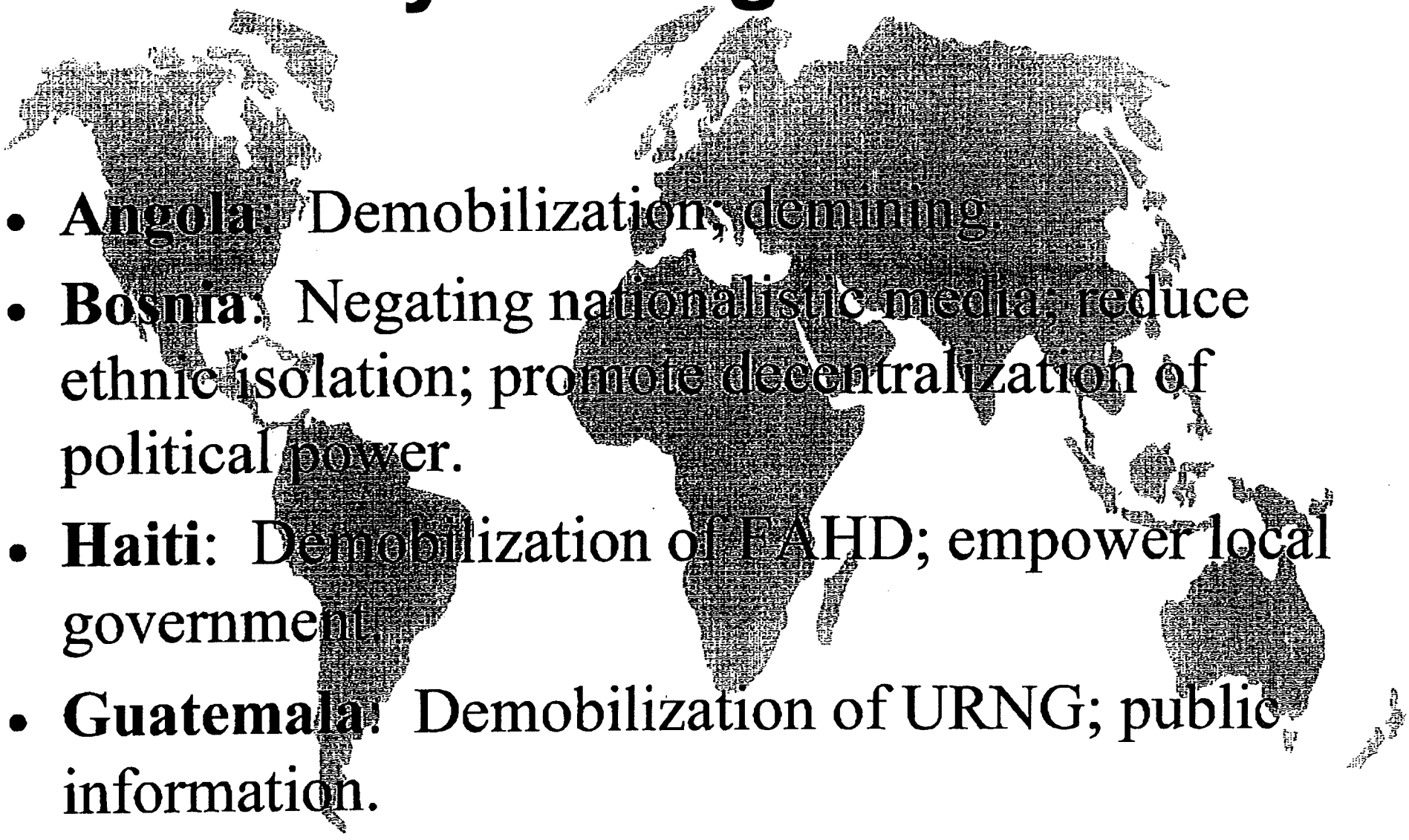
DIRECT INVOLVEMENT



- Overt USAID involvement.
- Establish decentralized field presence.
- Delegate Washington authority to field.
- Require substantial OTI involvement in shaping program focus.

JAN-30-1998 16:23 BHRO/OTI 202 216 3406 P.07/13

Identify Strategic Activities



- **Angola:** Demobilization; demining.
- **Bosnia:** Negating nationalistic media; reduce ethnic isolation; promote decentralization of political power.
- **Haiti:** Demobilization of FAHD; empower local government.
- **Guatemala:** Demobilization of URNG; public information.

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Accomplishments: Haiti

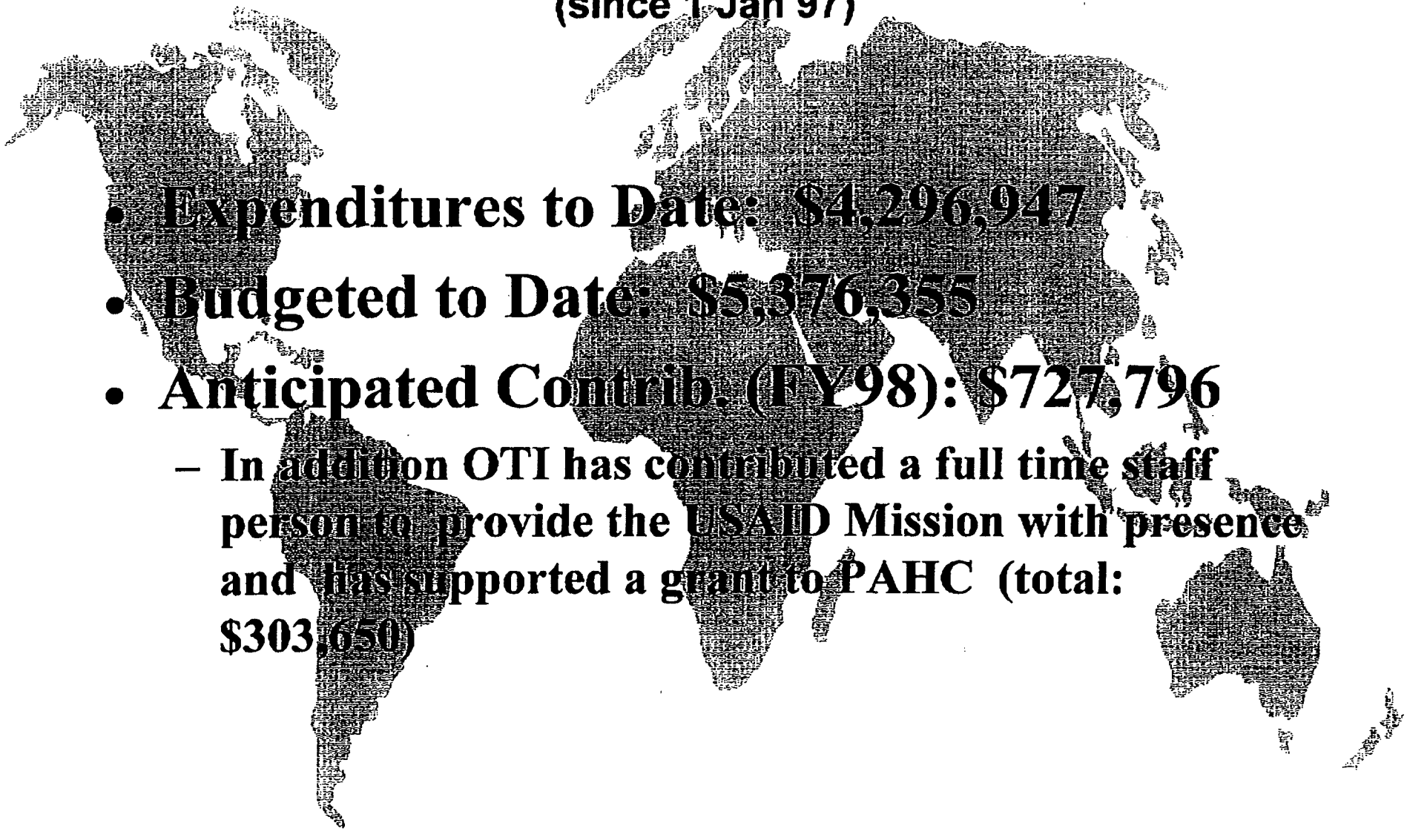


- Moved military state to civilian control
  - Retrained 5,000 former soldiers
    - **Used local vocational training**
- Re-engaged the populace in self-governance
  - Developed 2,000 community projects
    - **Impacted every community**
    - **Included 600 schools**

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Budget: USAID/OTI

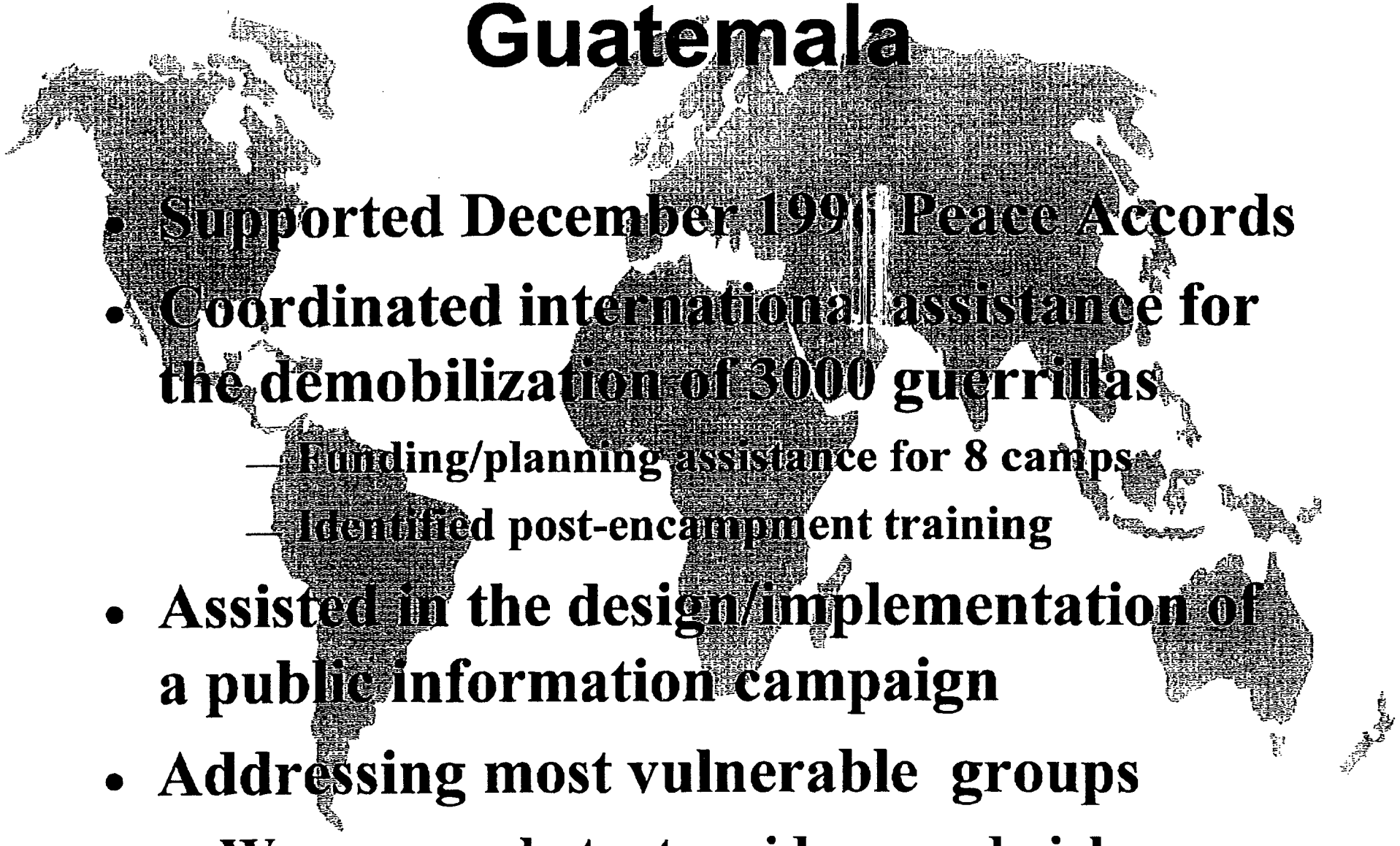
(since 1 Jan 97)



- **Expenditures to Date: $4,296,947**
- **Budgeted to Date: $5,376,355**
- **Anticipated Contrib. (FY98): $727,796**
  - **In addition OTI has contributed a full time staff person to provide the USAID Mission with presence and has supported a grant to PAHC (total: $303,650)**

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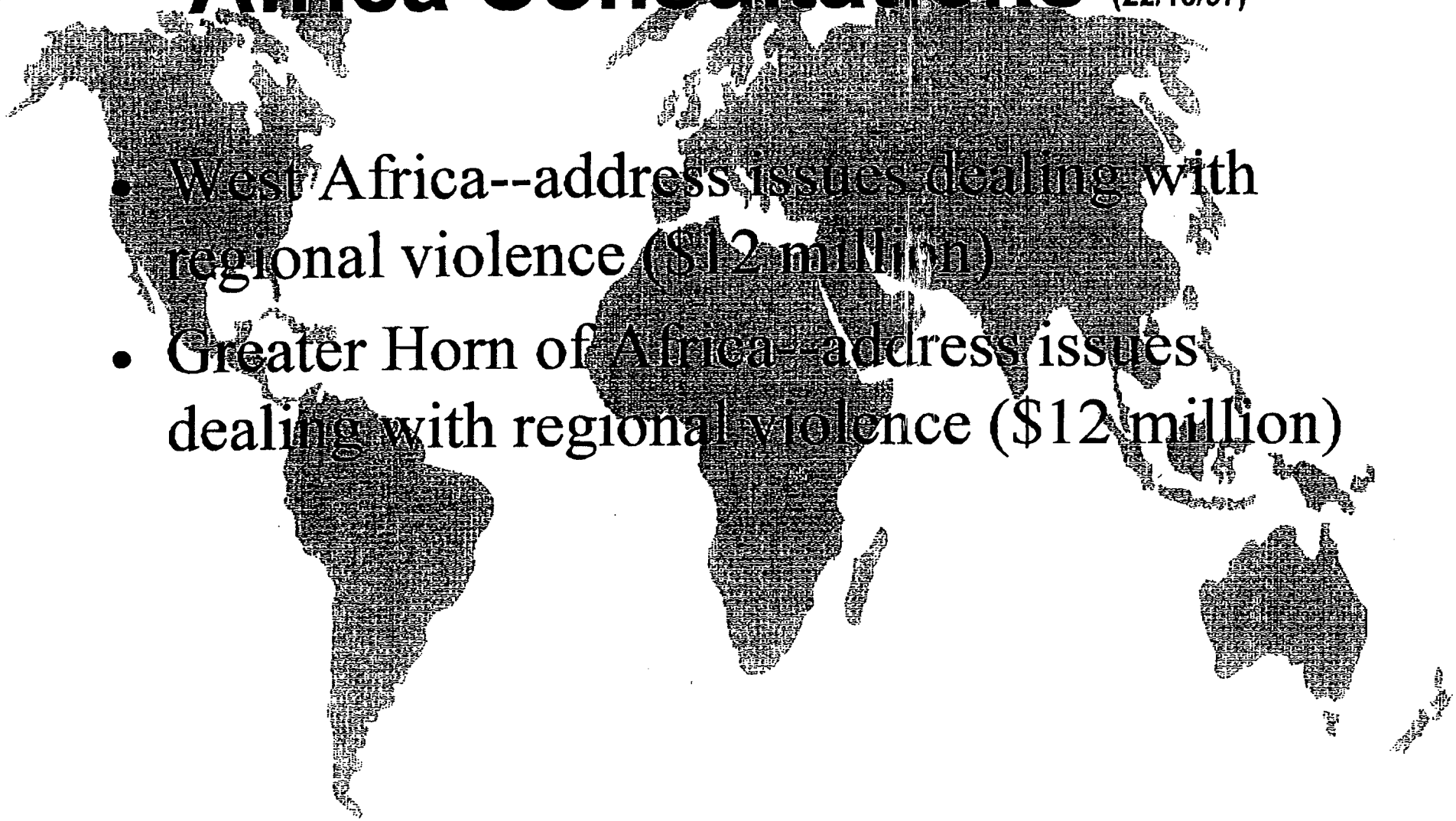
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  - Women combatants, widows and girls

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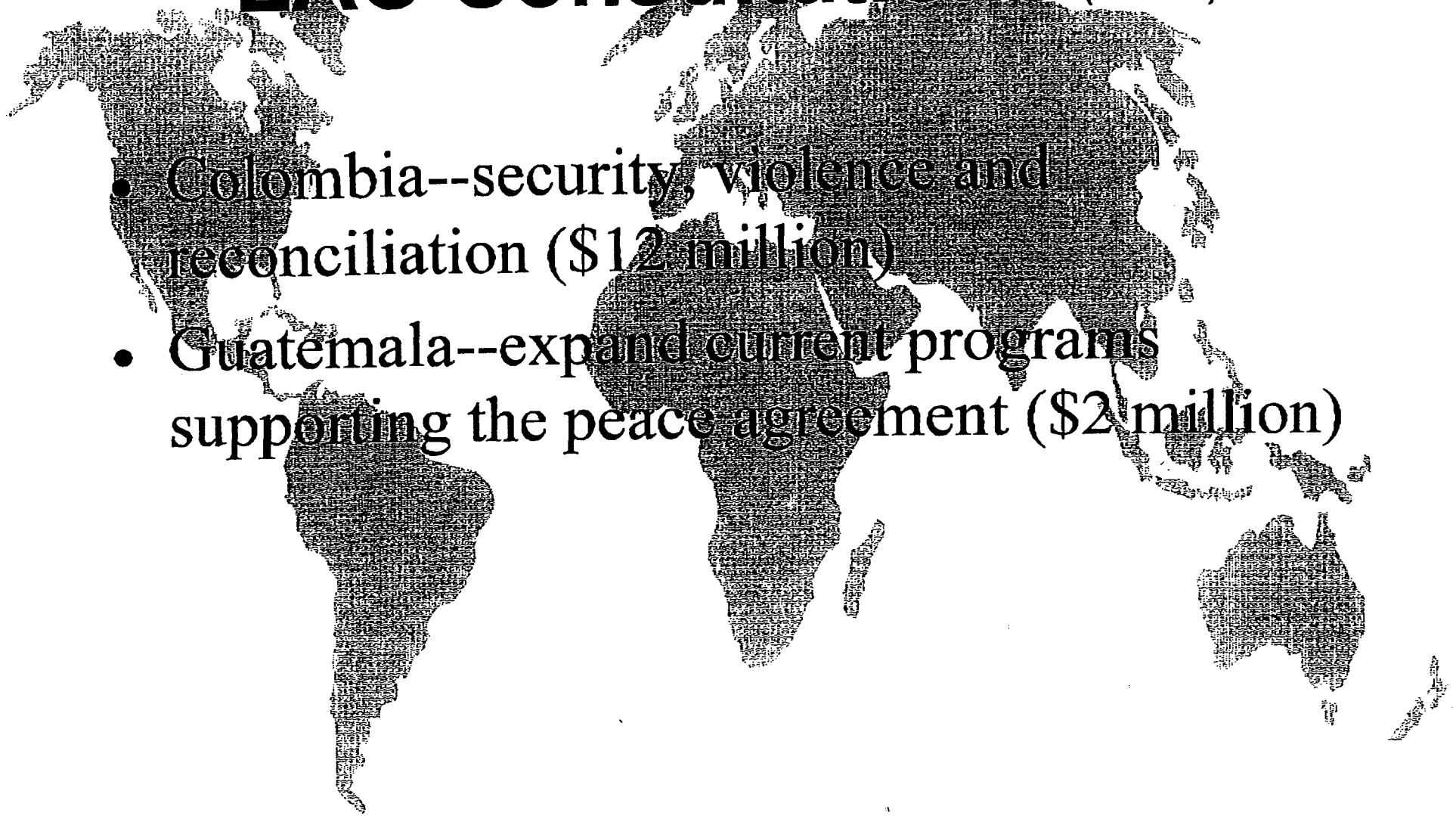
Projected Requirements Africa Consultations (22/10/97)



- West Africa--address issues dealing with regional violence ($12 million)
- Greater Horn of Africa--address issues dealing with regional violence ($12 million)

JAN-30-1998 16:29 BHRO/OTI 202 216 3406 P.12/13

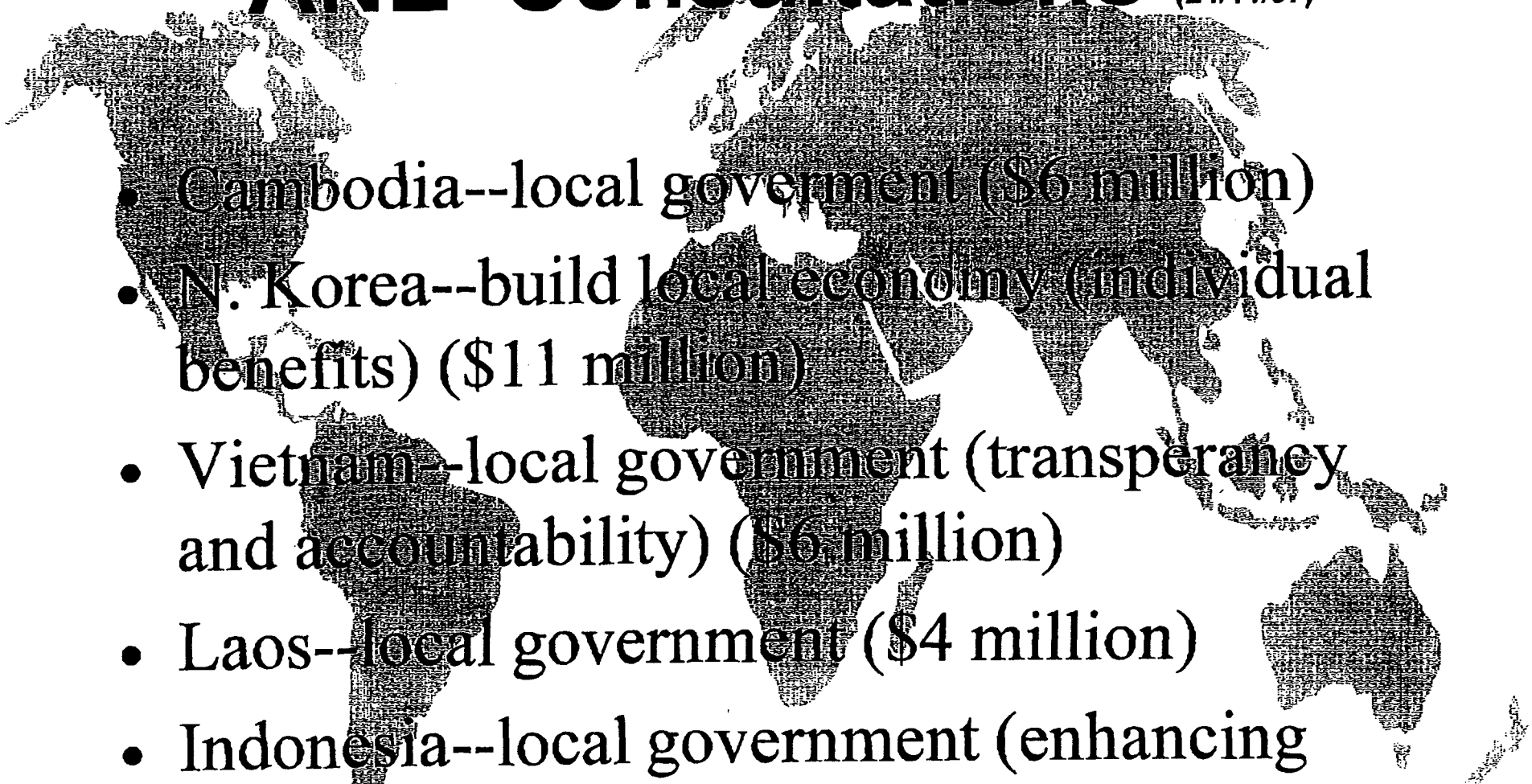
Projected Requirements LAC Consultations (21/10/97)



- Colombia--security, violence and reconciliation ($12 million)
- Guatemala--expand current programs supporting the peace agreement ($2 million)

JAN-30-1998 16:30 BHRO/OTI 202 216 3406 P.13/13

Projected Requirements ANE Consultations (24/11/97)

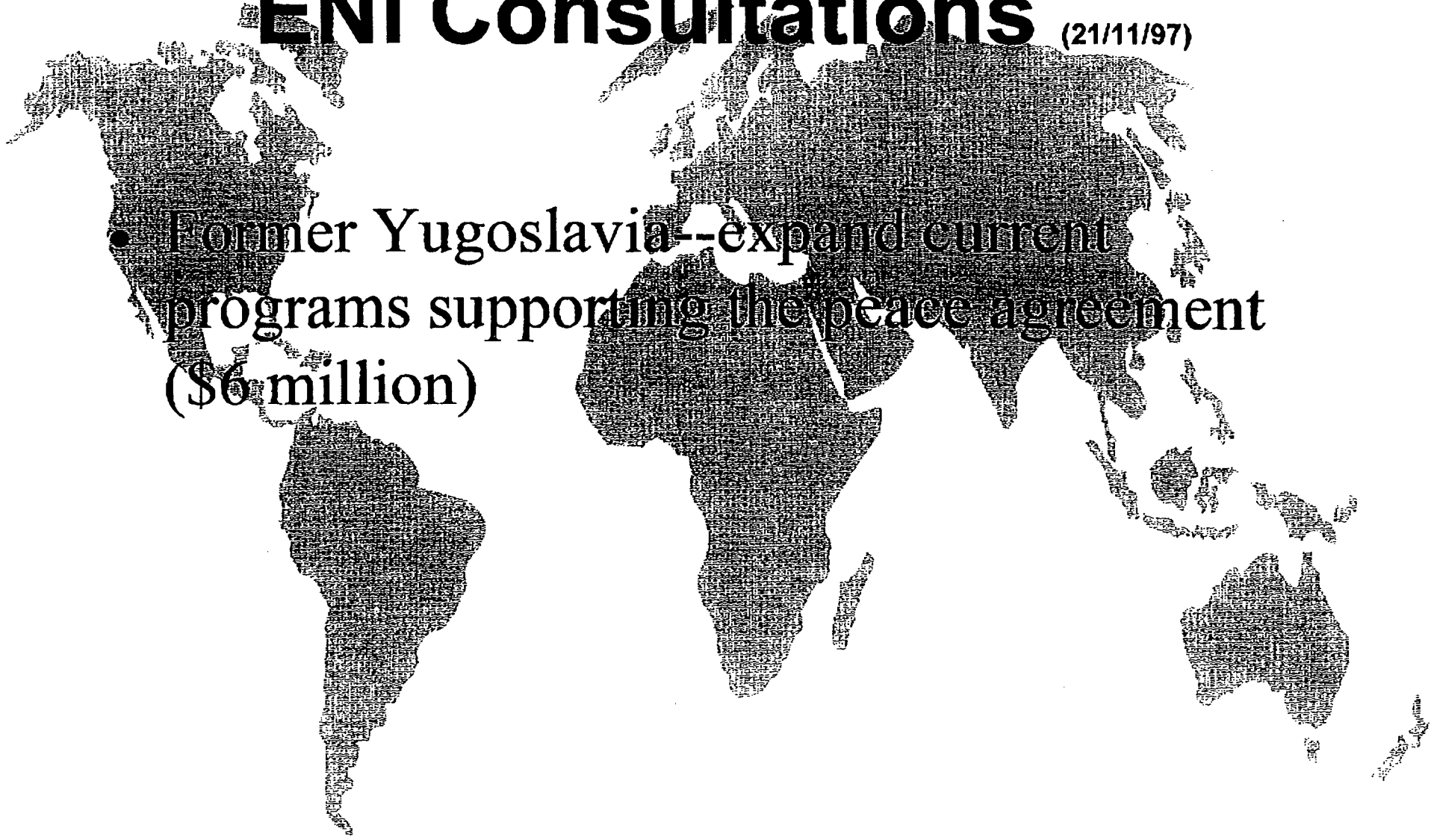


- Cambodia--local goverment ($6 million)
- N. Korea--build local economy (individual benefits) ($11 million)
- Vietnam--local government (transperancy and accountability) ($6 million)
- Laos--local government ($4 million)
- Indonesia--local government (enhancing democratic processes) ($12 million)
- Burma-- local govenment ($4 million)

TOTAL P.13

JAN-30-1998 17:07 BHRO/OTI 202 216 3406 P.02/13

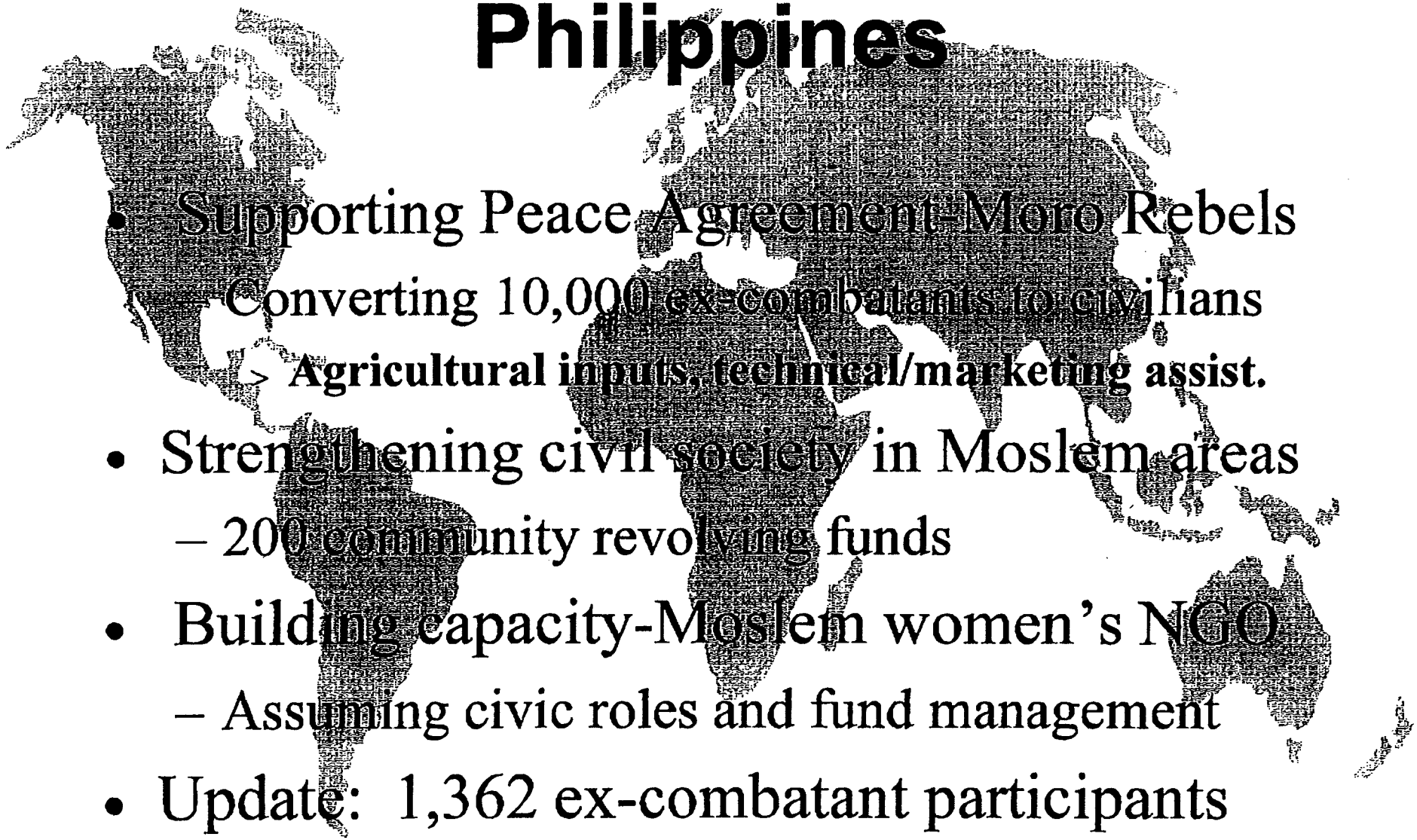
Projected Requirements ENI Consultations (21/11/97)



- Former Yugoslavia--expand current programs supporting the peace agreement ($6 million)

JAN-30-1998 17:08 BHRO/OTI 202 216 3406 P.03/13

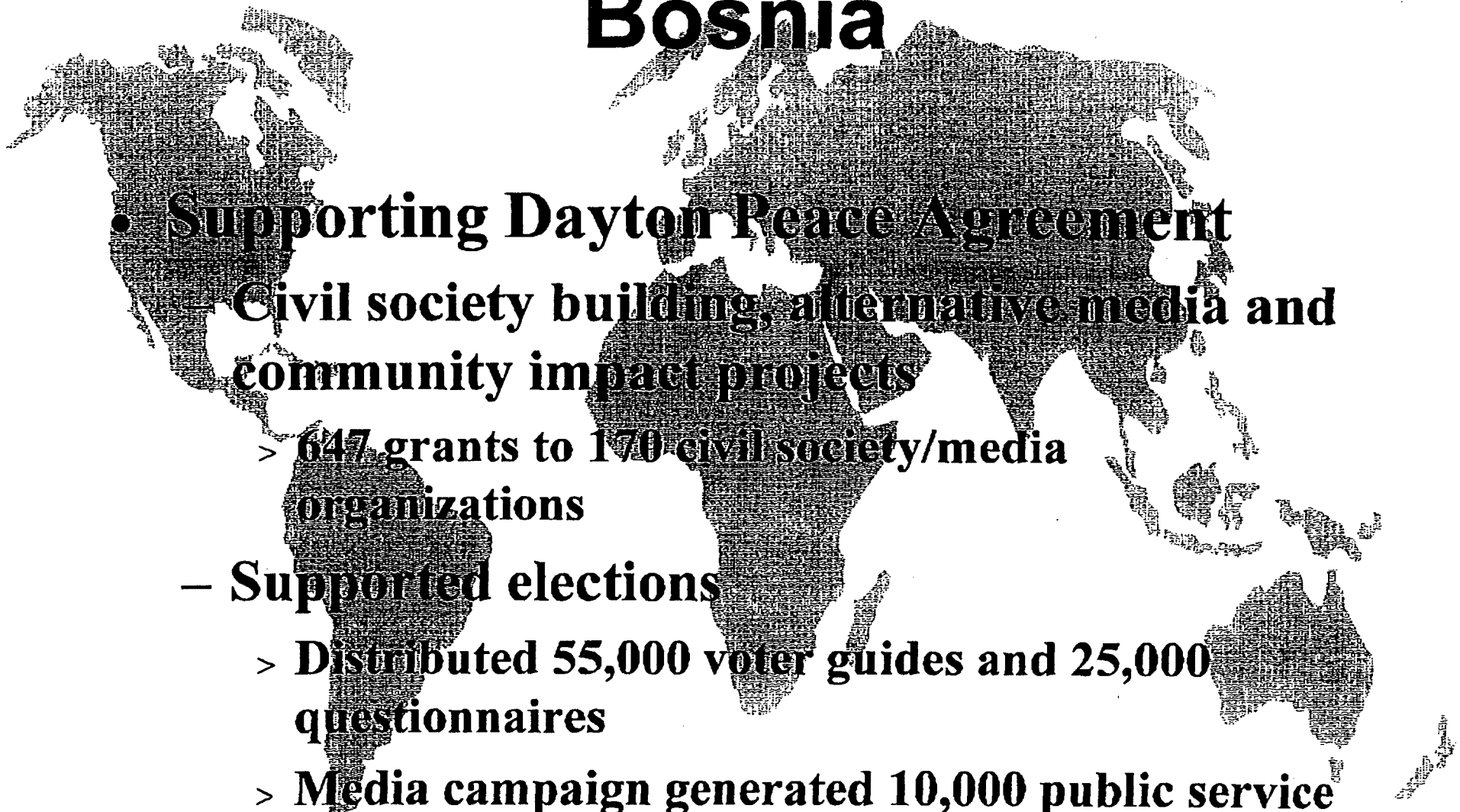
Accomplishments: Philippines



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  - Converting 10,000 ex-combatants to civilians
    - **Agricultural inputs, technical/marketing assist.**
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- Update: 1,362 ex-combatant participants planting on 2,697 hectares

JAN-30-1998 17:09 BHRO/OTI 202 216 3406 P.04/13

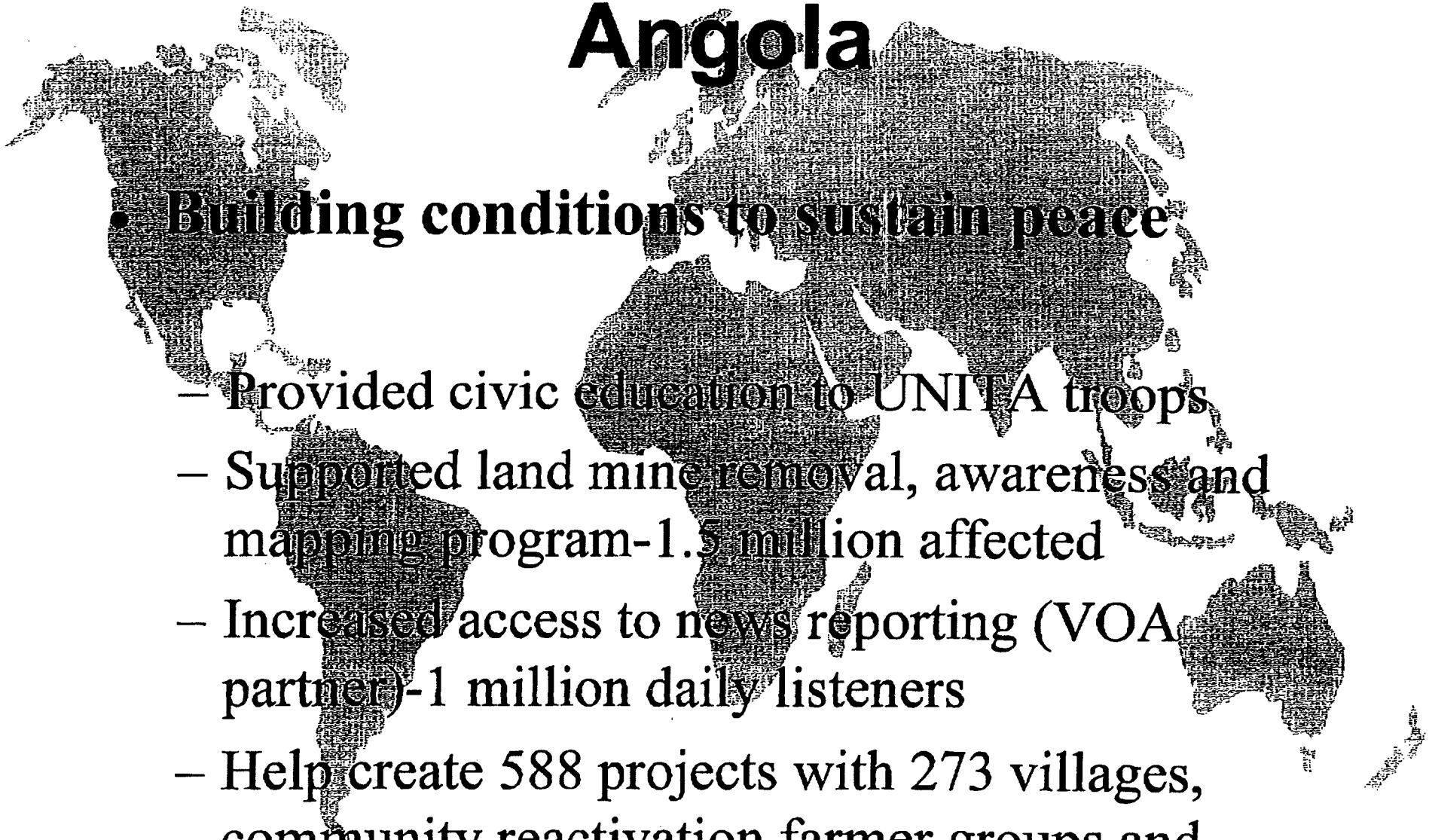
Accomplishments: Bosnia



- **Supporting Dayton Peace Agreement**
  - **Civil society building, alternative media and community impact projects**
    - **647 grants to 170 civil society/media organizations**
  - **Supported elections**
    - **Distributed 55,000 voter guides and 25,000 questionnaires**
    - **Media campaign generated 10,000 public service announcements and injected $270,000 of working capital to 34 TV/radio stations**

JAN-30-1998 17:10 BHRD/OTI 202 216 3406 P.05/13

Accomplishments: Angola



- **Building conditions to sustain peace**
  - Provided civic education to UNITA troops
  - Supported land mine removal, awareness and mapping program-1.5 million affected
  - Increased access to news reporting (VOA partner)-1 million daily listeners
  - Help create 588 projects with 273 villages, community reactivation farmer groups and entrepreneurs

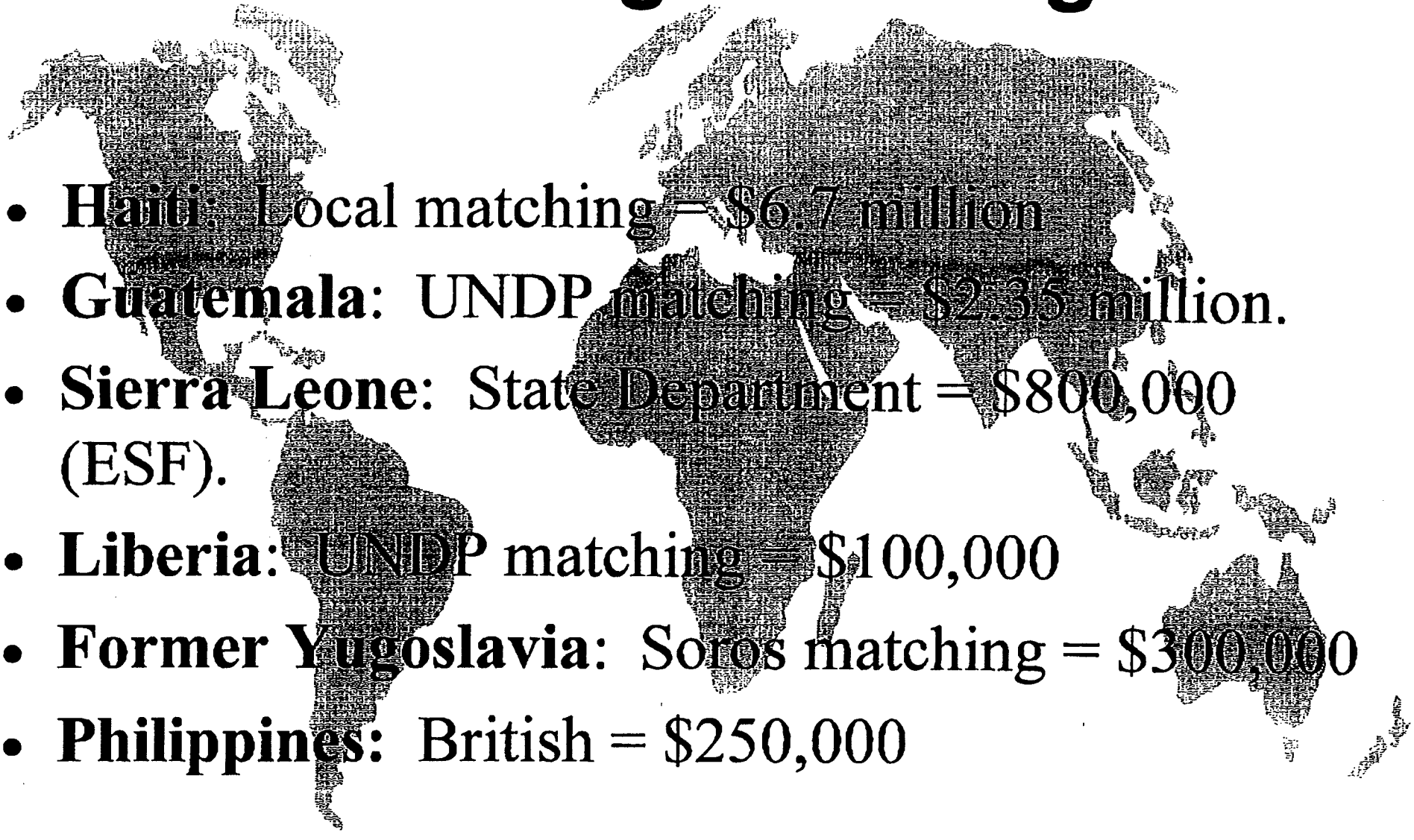
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Guidance for Strategy Development



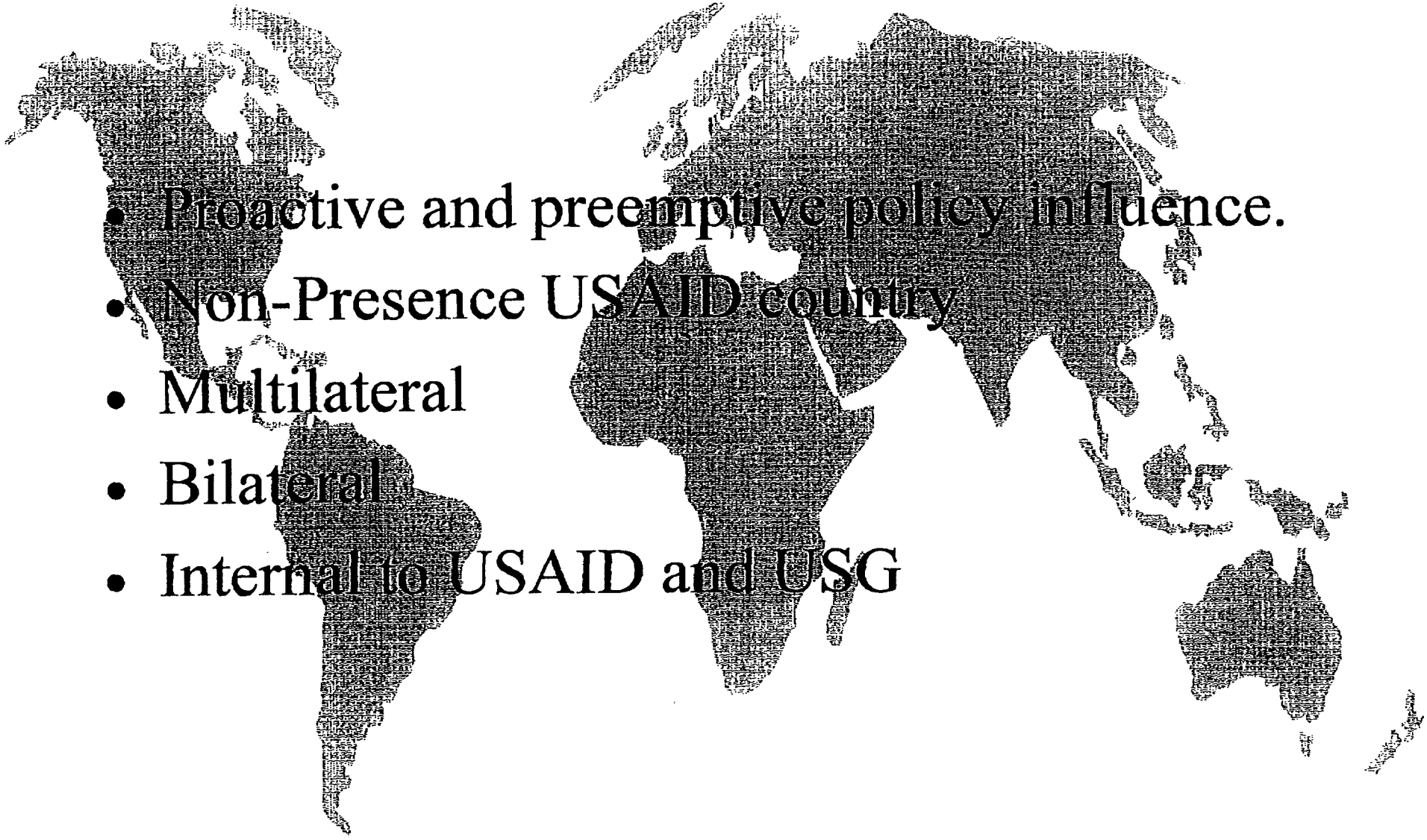
- Agree on strategic framework prior to field deployment.
- Focus on core political issues that caused and perpetuate the crisis.
- Address attitudes and behavior vs institutional solutions.
- Look for ways to empower citizens.
- Design for unstable, high risk, environment.
- Demonstrate activity areas to reduce risk for follow-on (targeted pilot activities).

Leverage Funding



- **Haiti**: Local matching = $6.7 million
- **Guatemala**: UNDP matching = $2.35 million.
- **Sierra Leone**: State Department = $800,000 (ESF).
- **Liberia**: UNDP matching = $100,000
- **Former Yugoslavia**: Soros matching = $300,000
- **Philippines**: British = $250,000

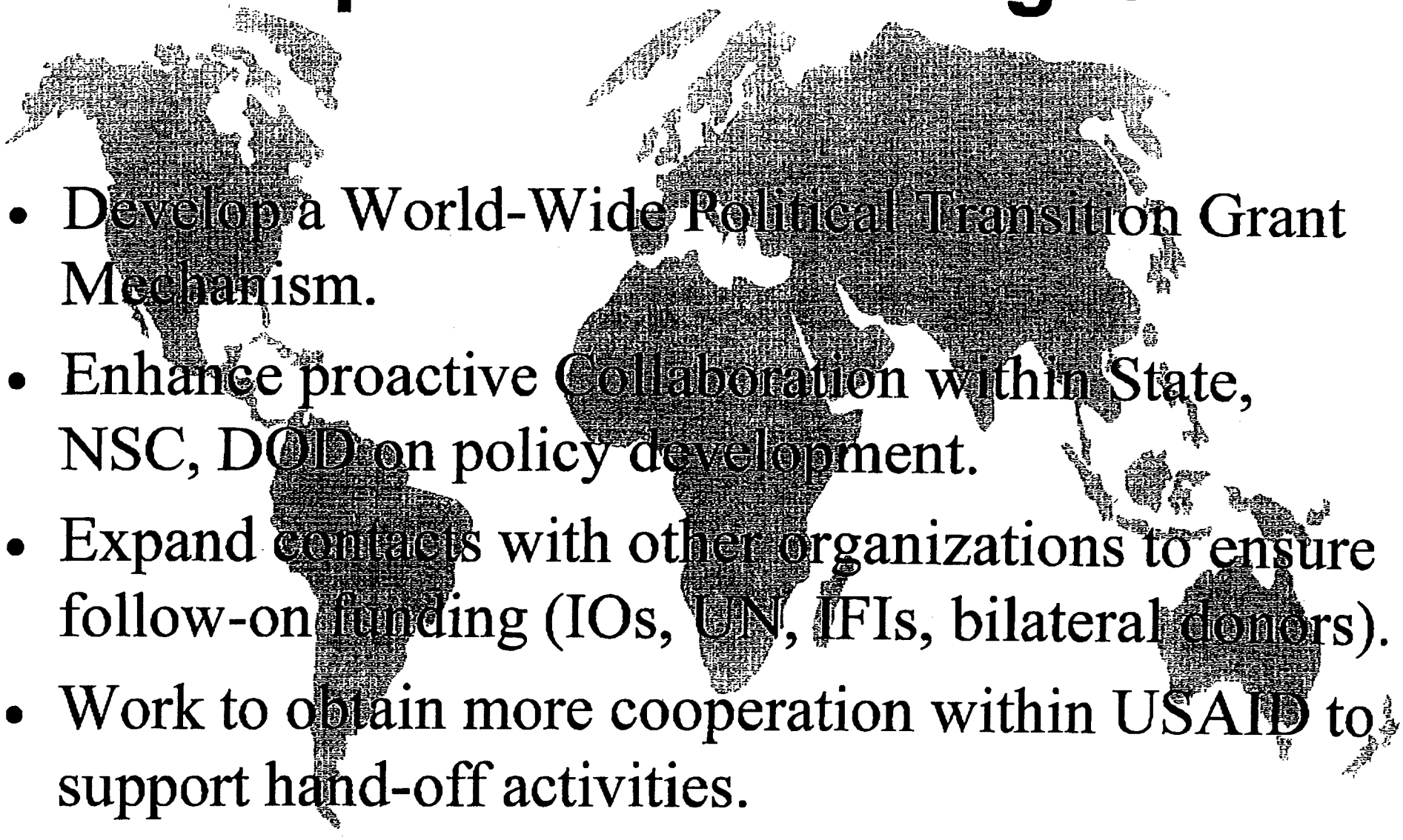
Ensure Collaboration



- Proactive and preemptive policy influence.
- Non-Presence USAID country
- Multilateral
- Bilateral
- Internal to USAID and USG

202 216 3406 P.09/13

Operational Changes



- Develop a World-Wide Political Transition Grant Mechanism.
- Enhance proactive Collaboration within State, NSC, DOD on policy development.
- Expand contacts with other organizations to ensure follow-on funding (IOs, UN, IFIs, bilateral donors).
- Work to obtain more cooperation within USAID to support hand-off activities.

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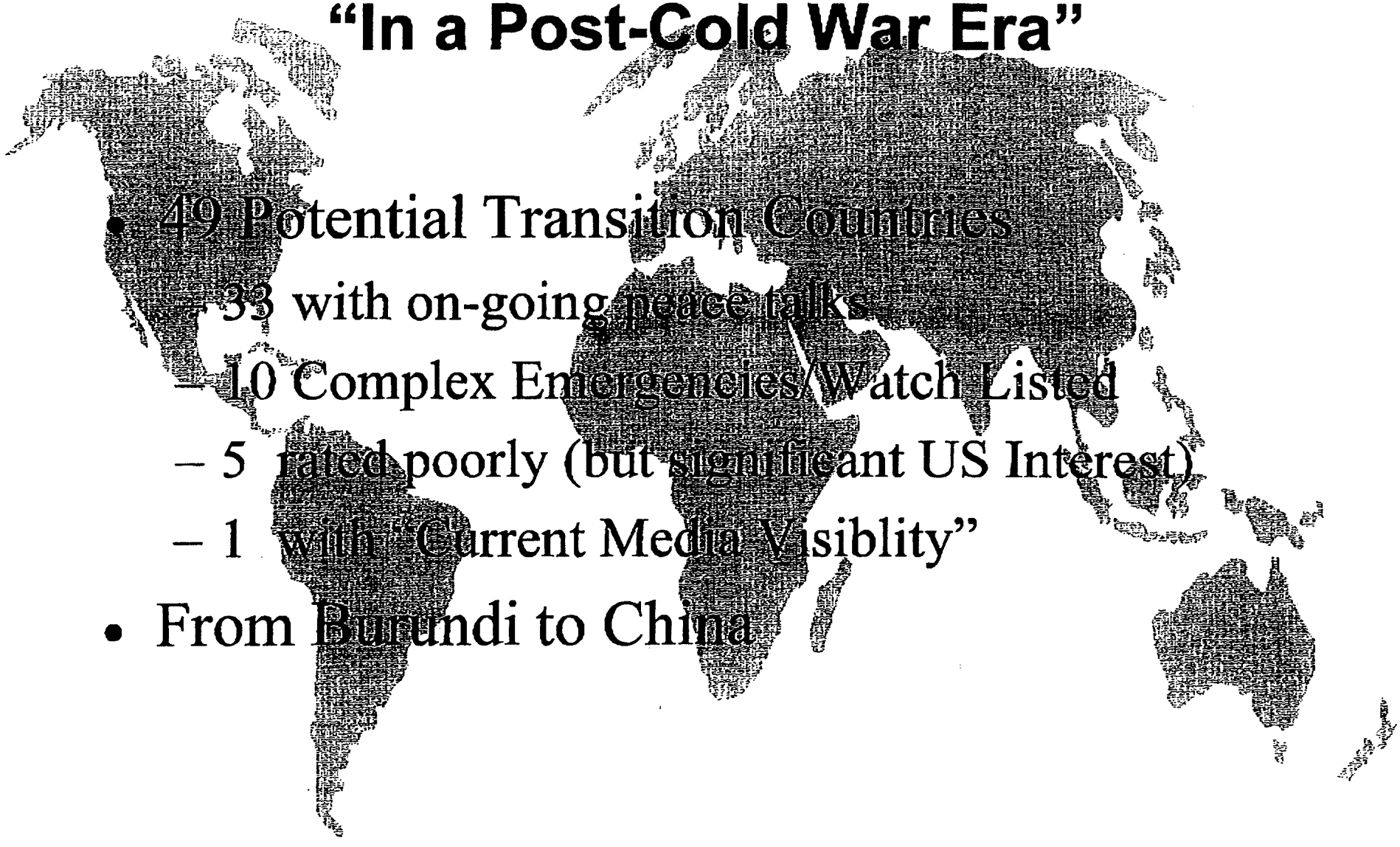
Institutionalize OTI



- Recognition/understanding within other USG offices
- Recognition internationally
- Collaboration with other USAID offices

TheTransition Market

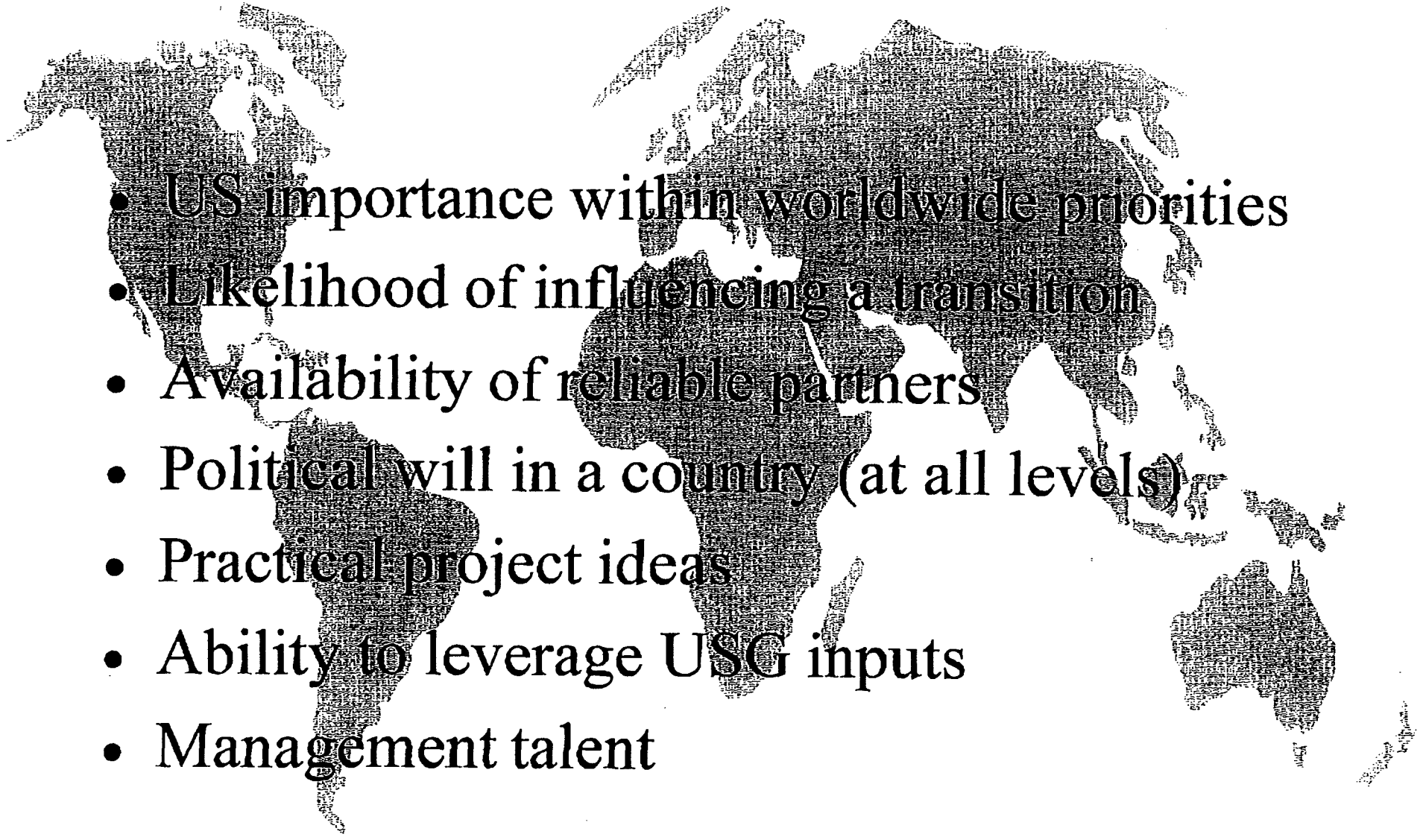
"In a Post-Cold War Era"



- 49 Potential Transition Countries
  - 33 with on-going peace talks
  - 10 Complex Emergencies/Watch Listed
    - 5 rated poorly (but significant US Interest)
    - 1 with "Current Media Visiblity"
- From Burundi to China

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Management Guidelines



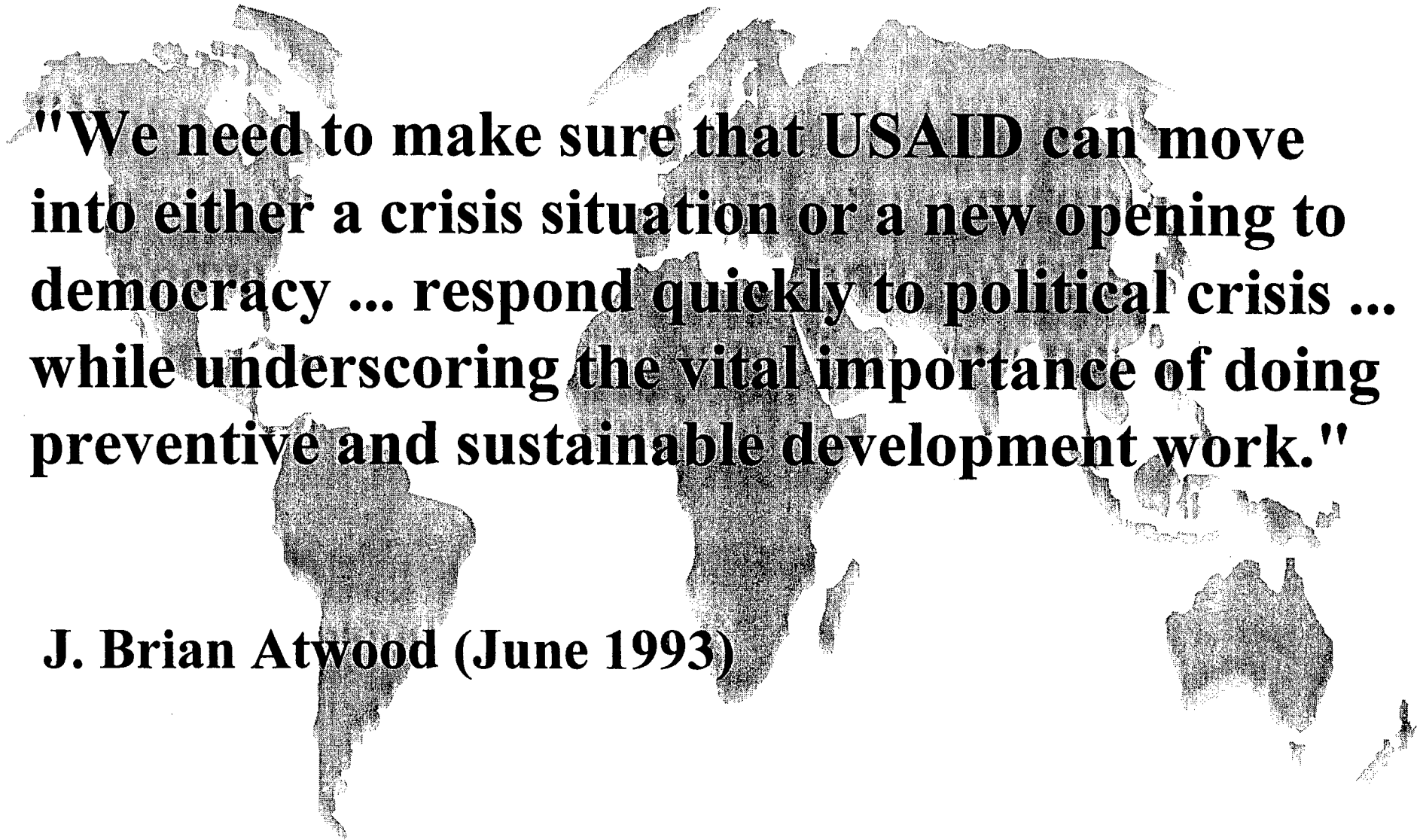
- US importance within worldwide priorities
- Likelihood of influencing a transition
- Availability of reliable partners
- Political will in a country (at all levels)
- Practical project ideas
- Ability to leverage USG inputs
- Management talent

202 216 3406 P.13/13
JAN-30-1998 17:20 BHRD/OTI
TOTAL P.13

USAID



- Recognition/understanding within USAID.
- Developing collegial relations.
- Hand-off.
- Staff (career track).
- Administrative support.



"We need to make sure that USAID can move into either a crisis situation or a new opening to democracy ... respond quickly to political crisis ... while underscoring the vital importance of doing preventive and sustainable development work."

J. Brian Atwood (June 1993)

OTI Mandate

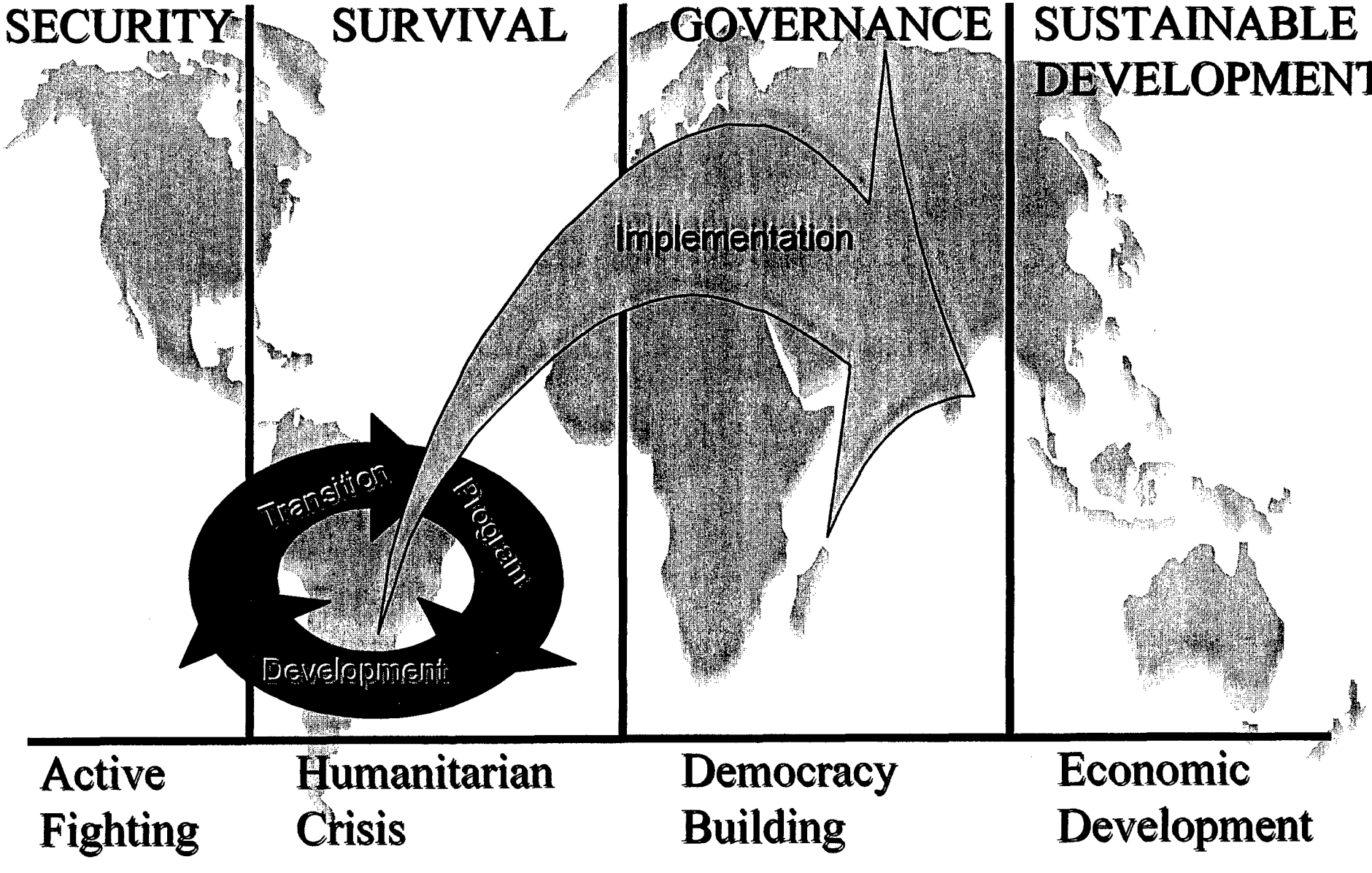


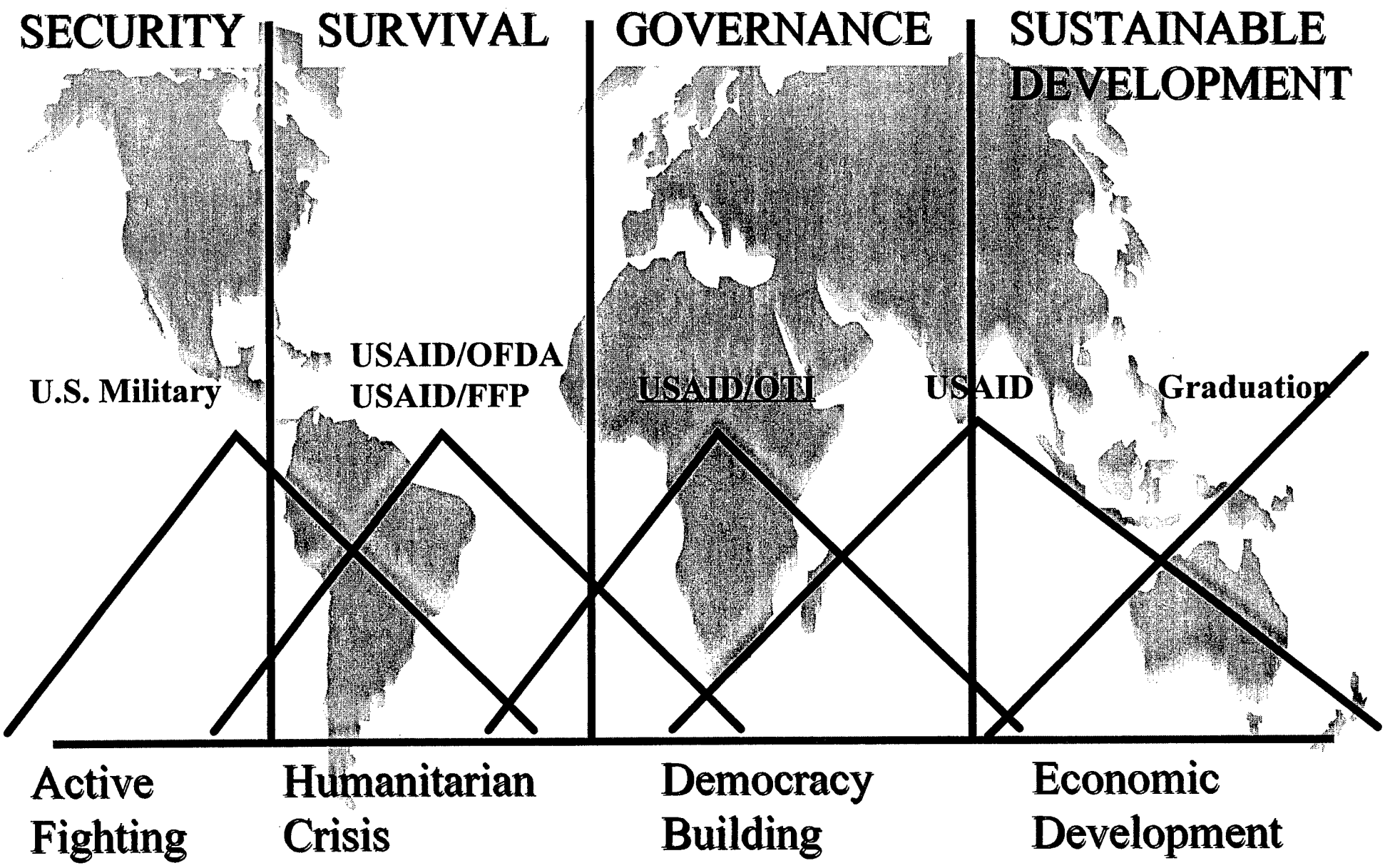
To bring fast, direct and overt political development assistance to the acute needs of priority nations emerging from political, economic and/or social distress.

Operating Assumptions



- **Assist countries to move beyond crisis.**
- **Bridge the gap in USAID and USG programs.**
- **Speed USAID's response time.**


SECURITY
SURVIVAL
GOVERNANCE
SUSTAINABLE DEVELOPMENT
Implementation
Transition
Program
Development
Active Fighting
Humanitarian Crisis
Democracy Building
Economic Development


SECURITY
SURVIVAL
GOVERNANCE
SUSTAINABLE DEVELOPMENT
U.S. Military
USAID/OFDA
USAID/FFP
USAID/OTI
USAID
Graduation
Active Fighting
Humanitarian Crisis
Democracy Building
Economic Development

OTI Country Programs

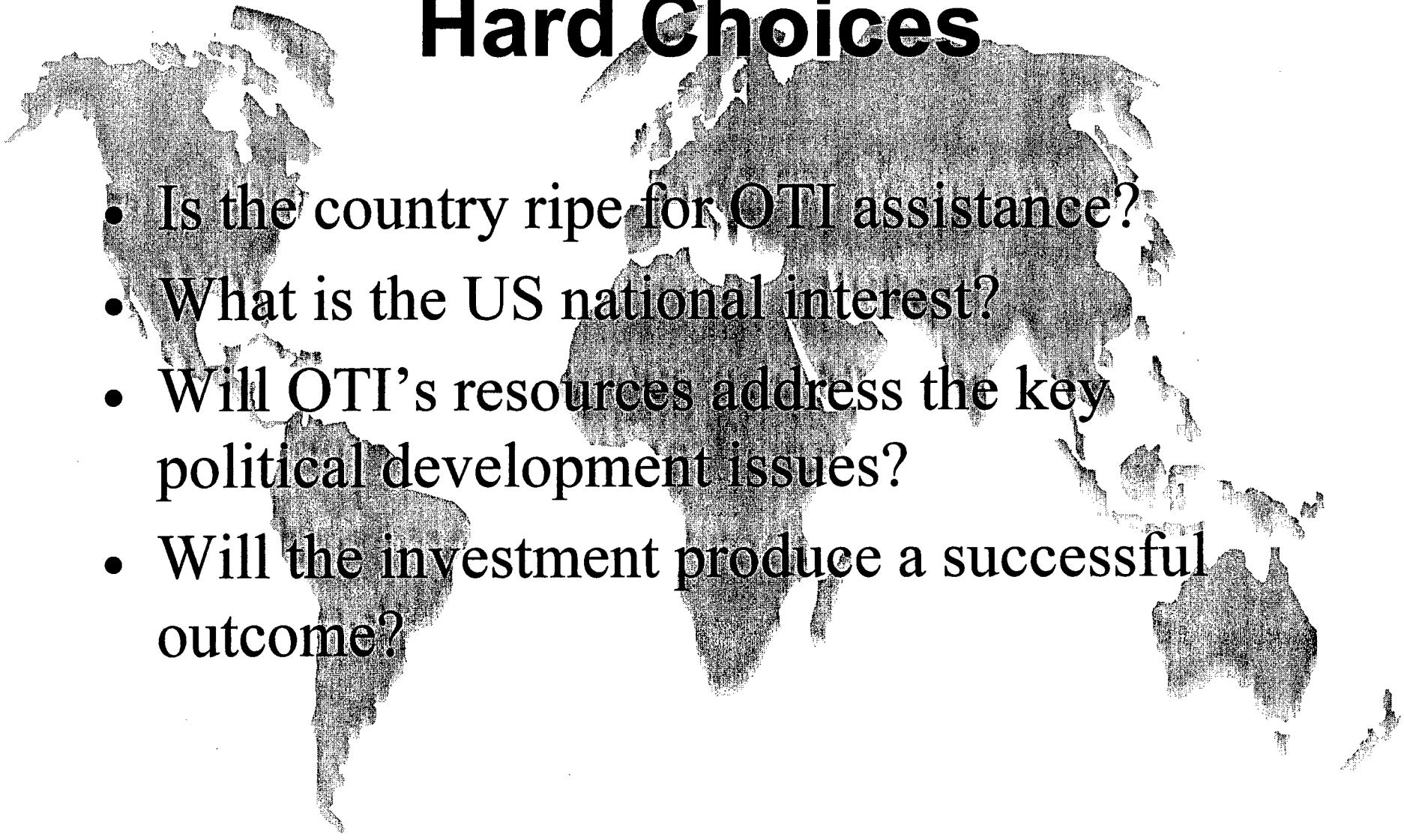


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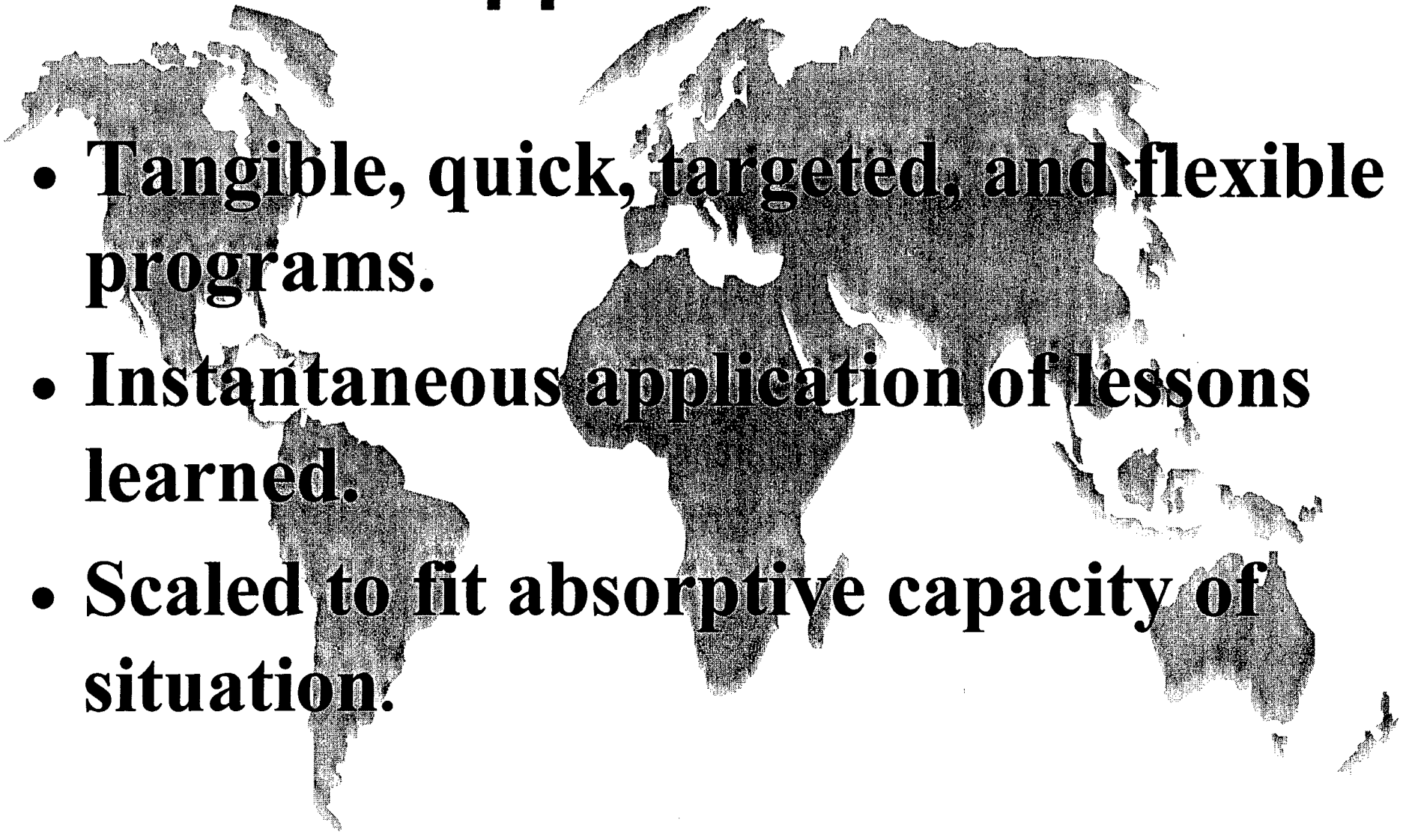
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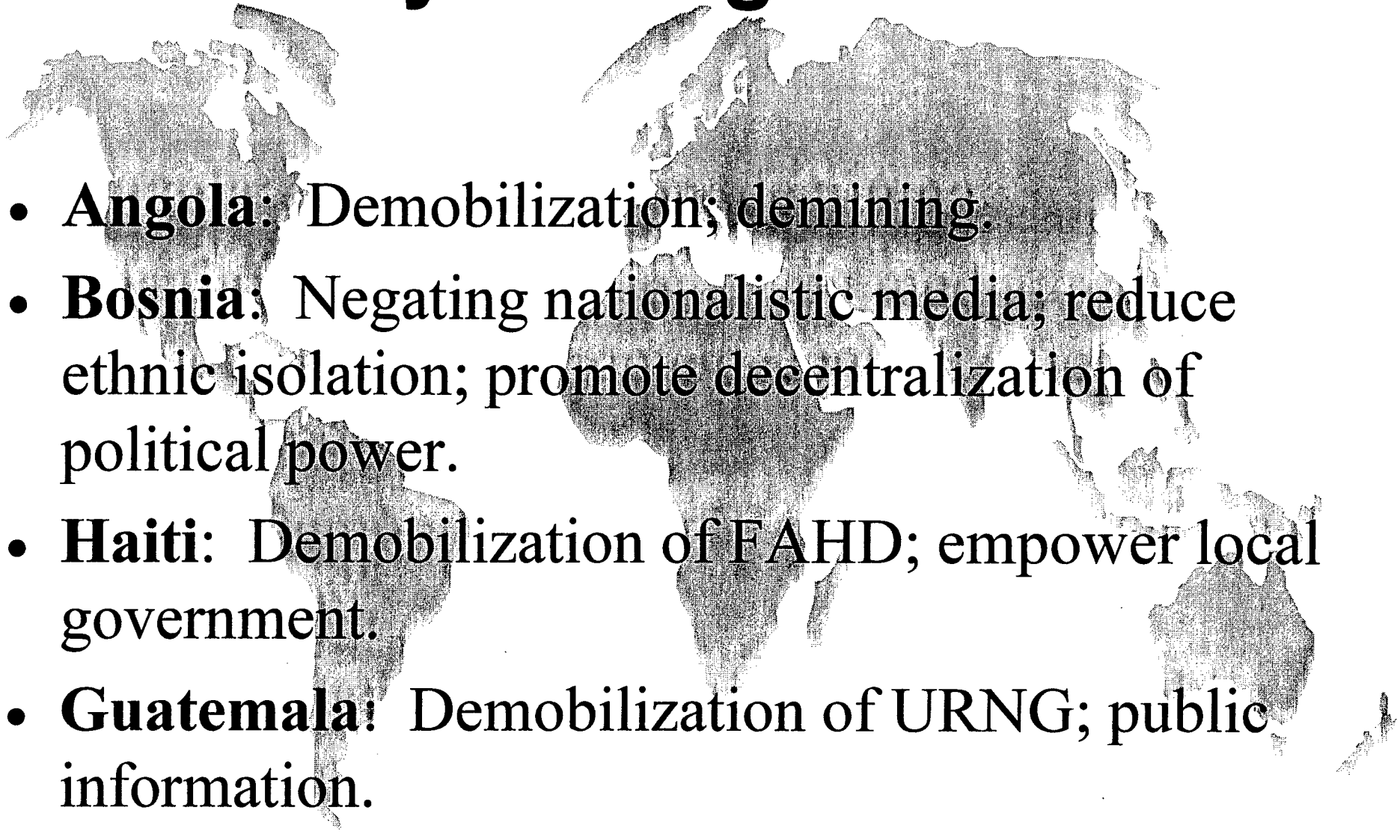
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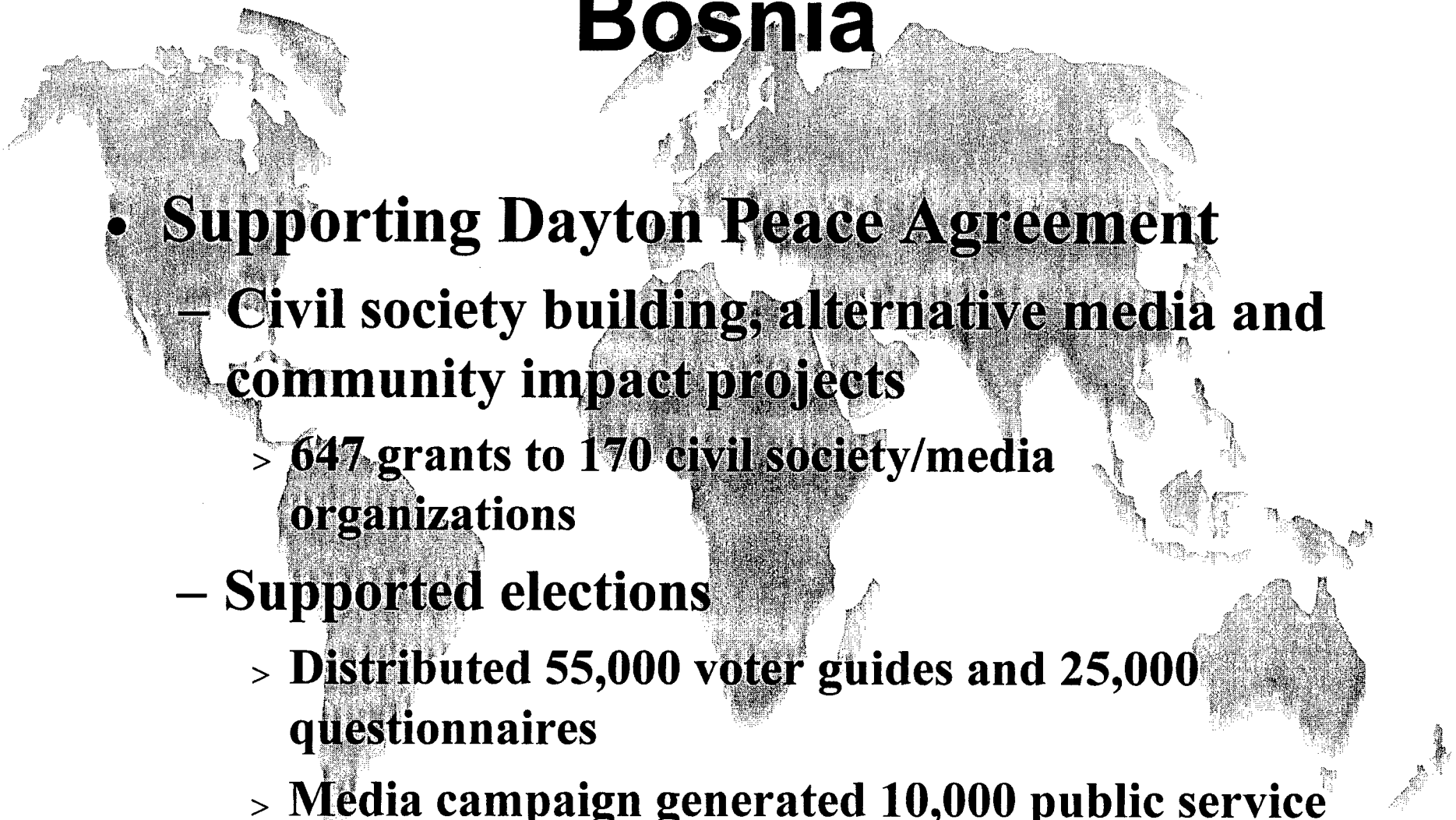
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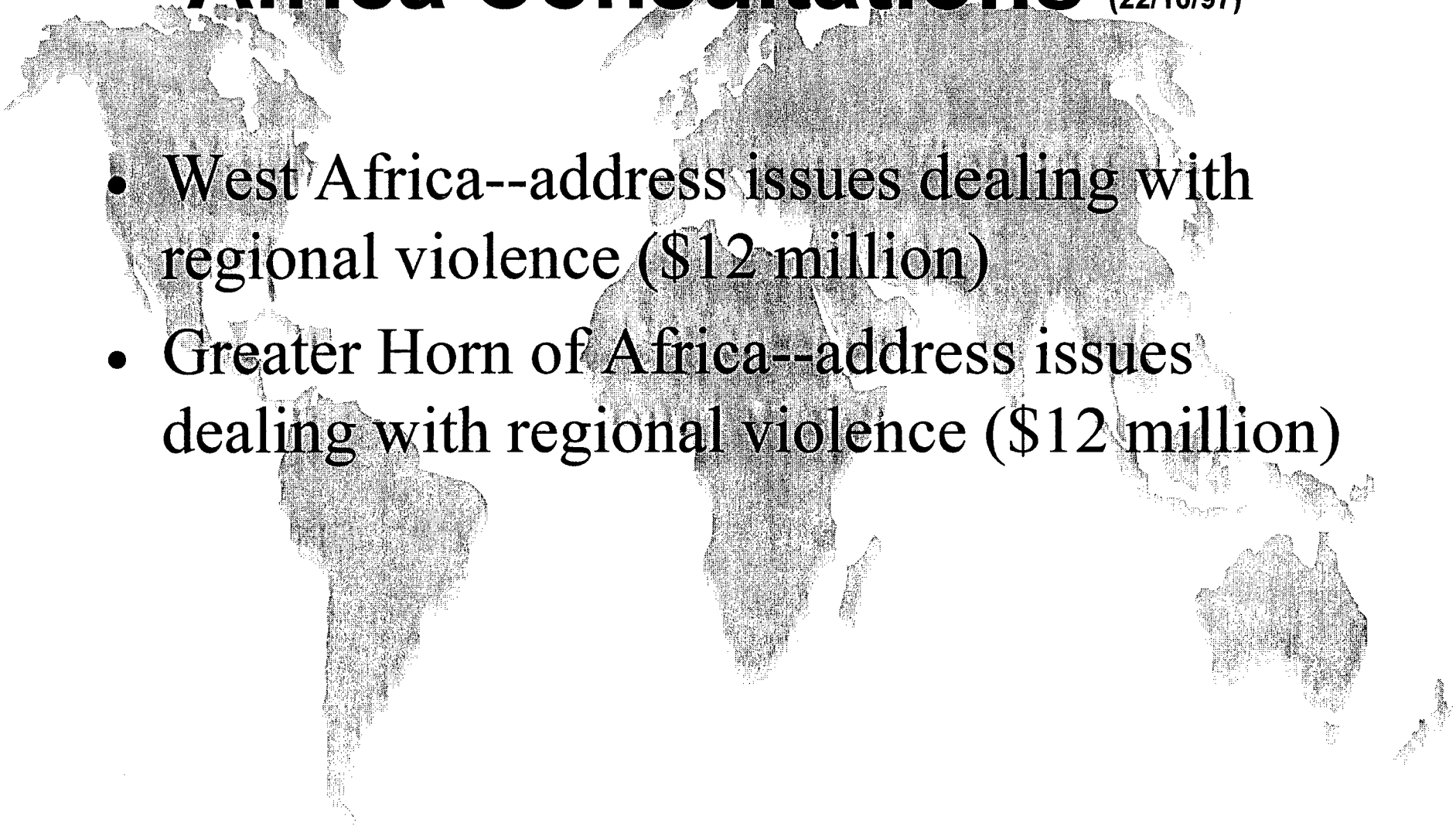
TheTransition Market

"In a Post-Cold War Era"



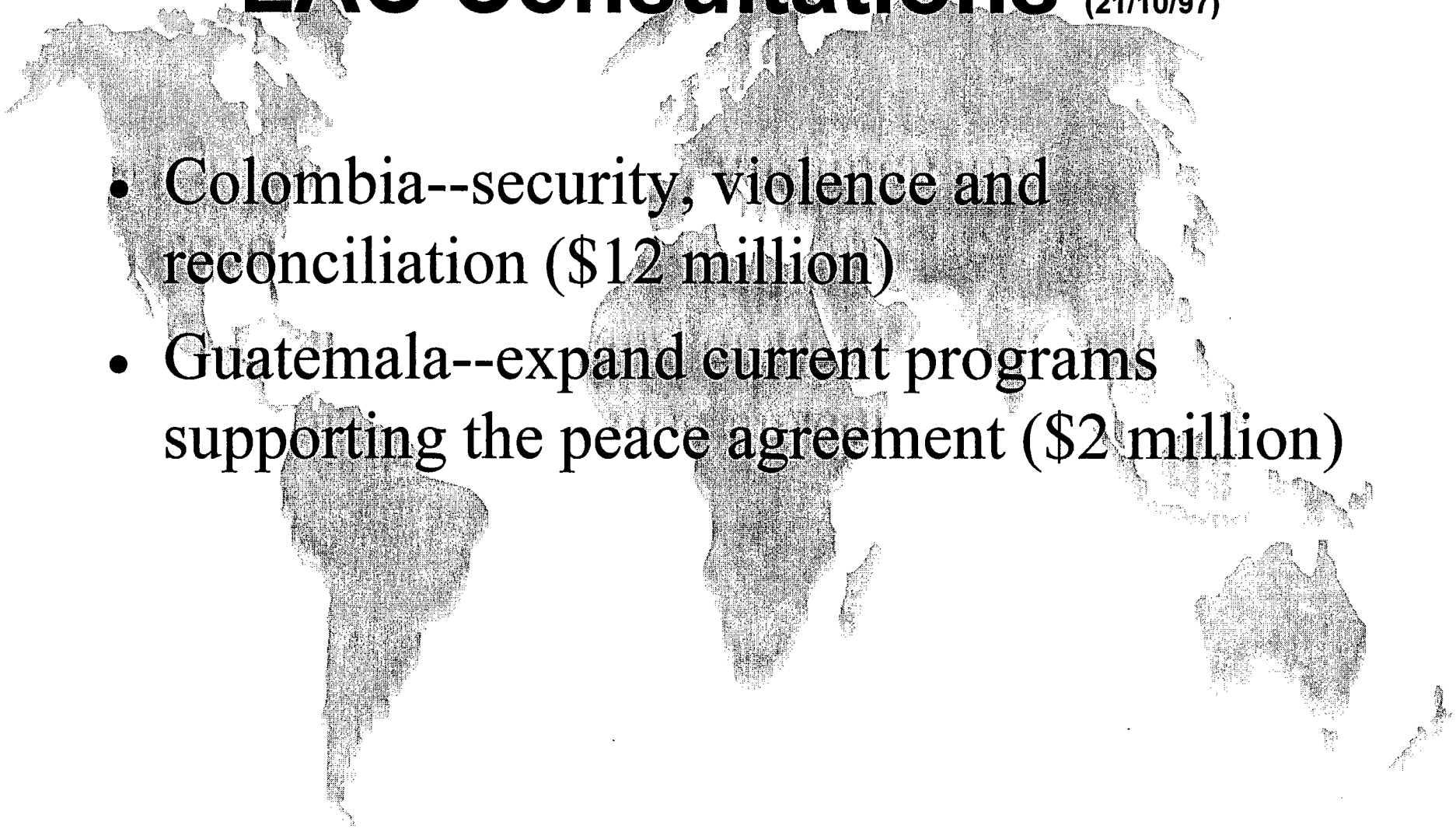
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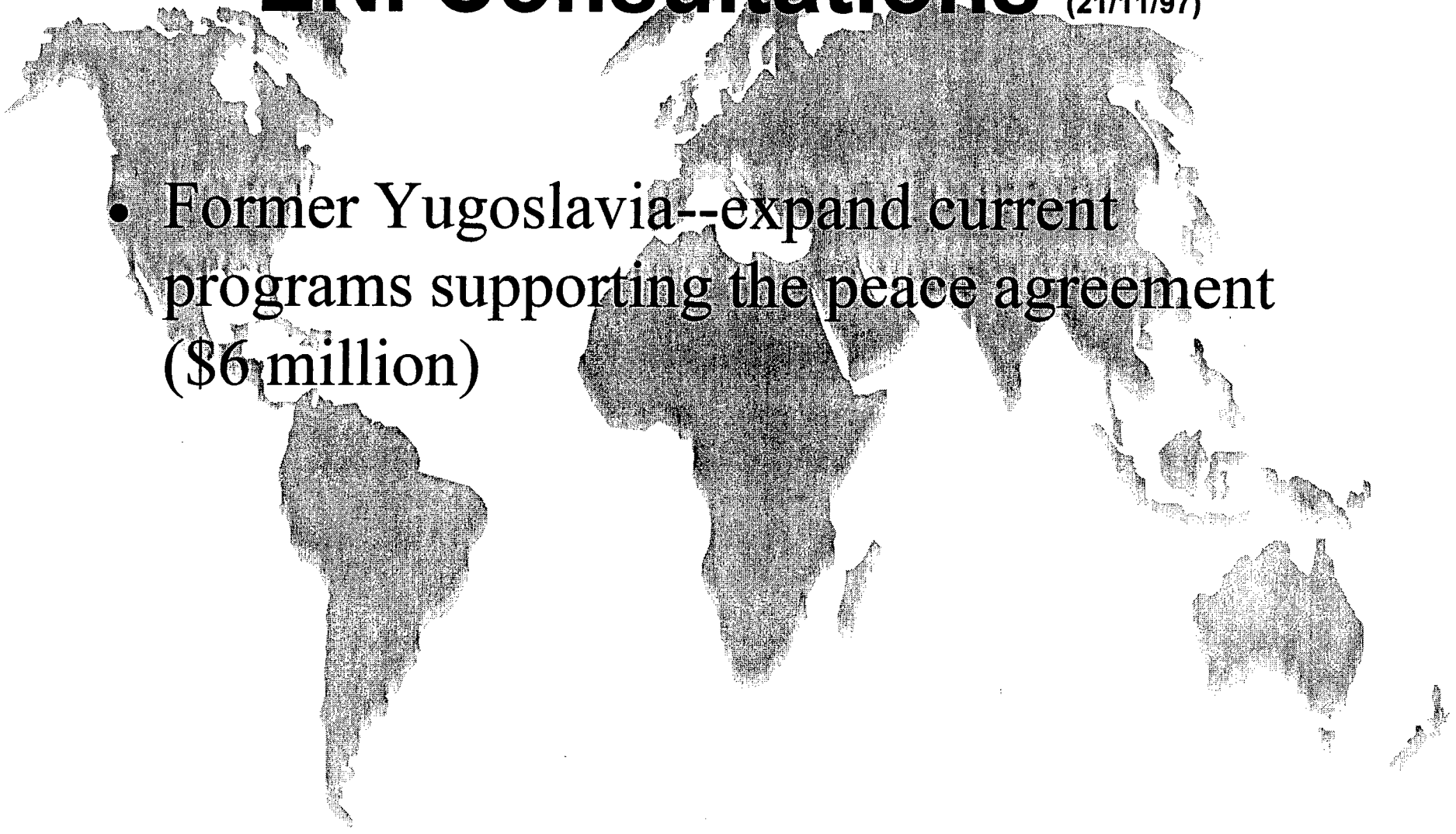


- Colombia--security, violence and reconciliation ($12 million)
- Guatemala--expand current programs supporting the peace agreement ($2 million)

Projected Requirements ANE Consultations (24/11/97)

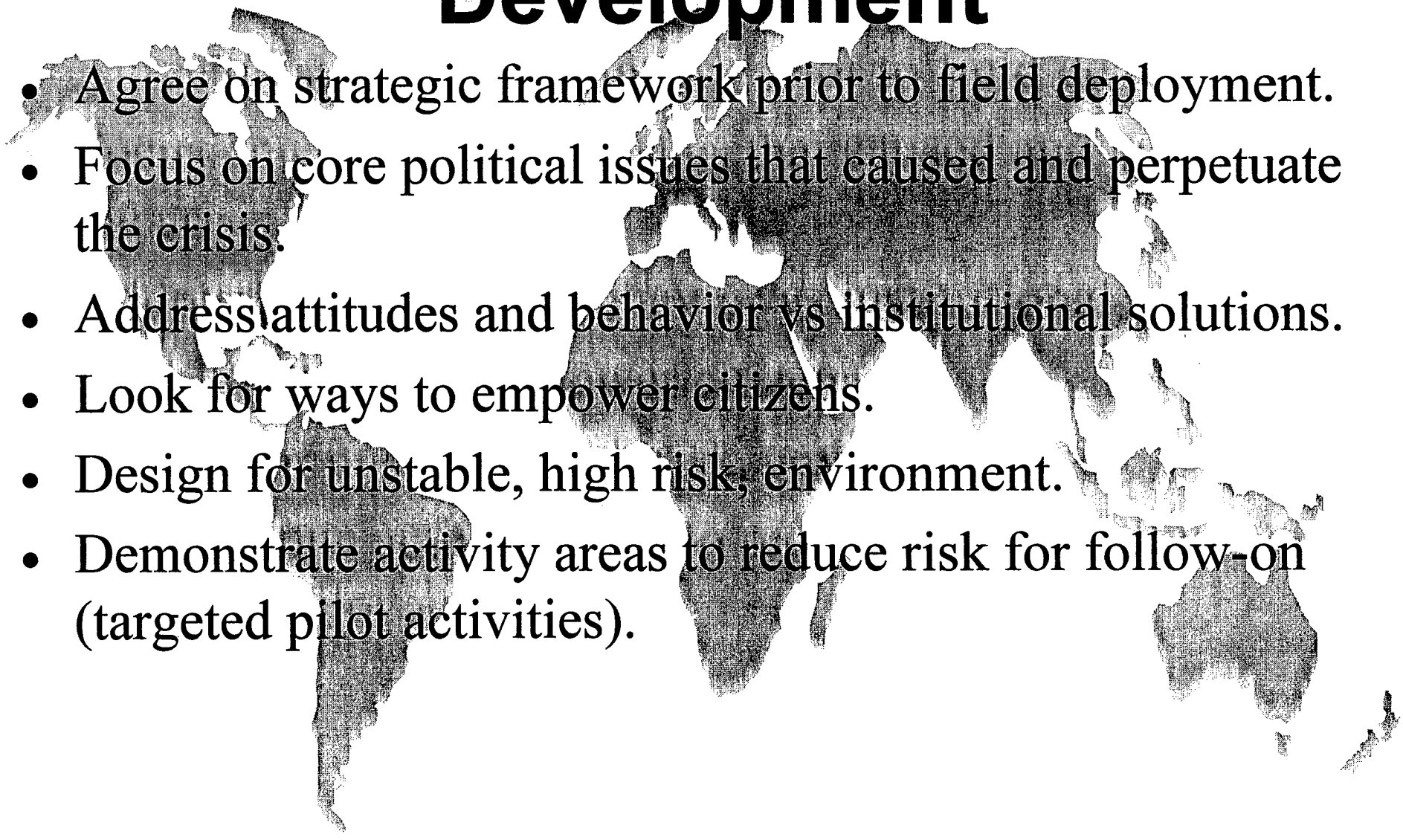
- Cambodia--local goverment ($6 million)
- N. Korea--build local economy (individual benefits) ($11 million)
- Vietnam--local government (transperancy and accountability) ($6 million)
- Laos--local government ($4 million)
- Indonesia--local government (enhancing democratic processes) ($12 million)
- Burma-- local govenment ($4 million)

Projected Requirements ENI Consultations (21/11/97)



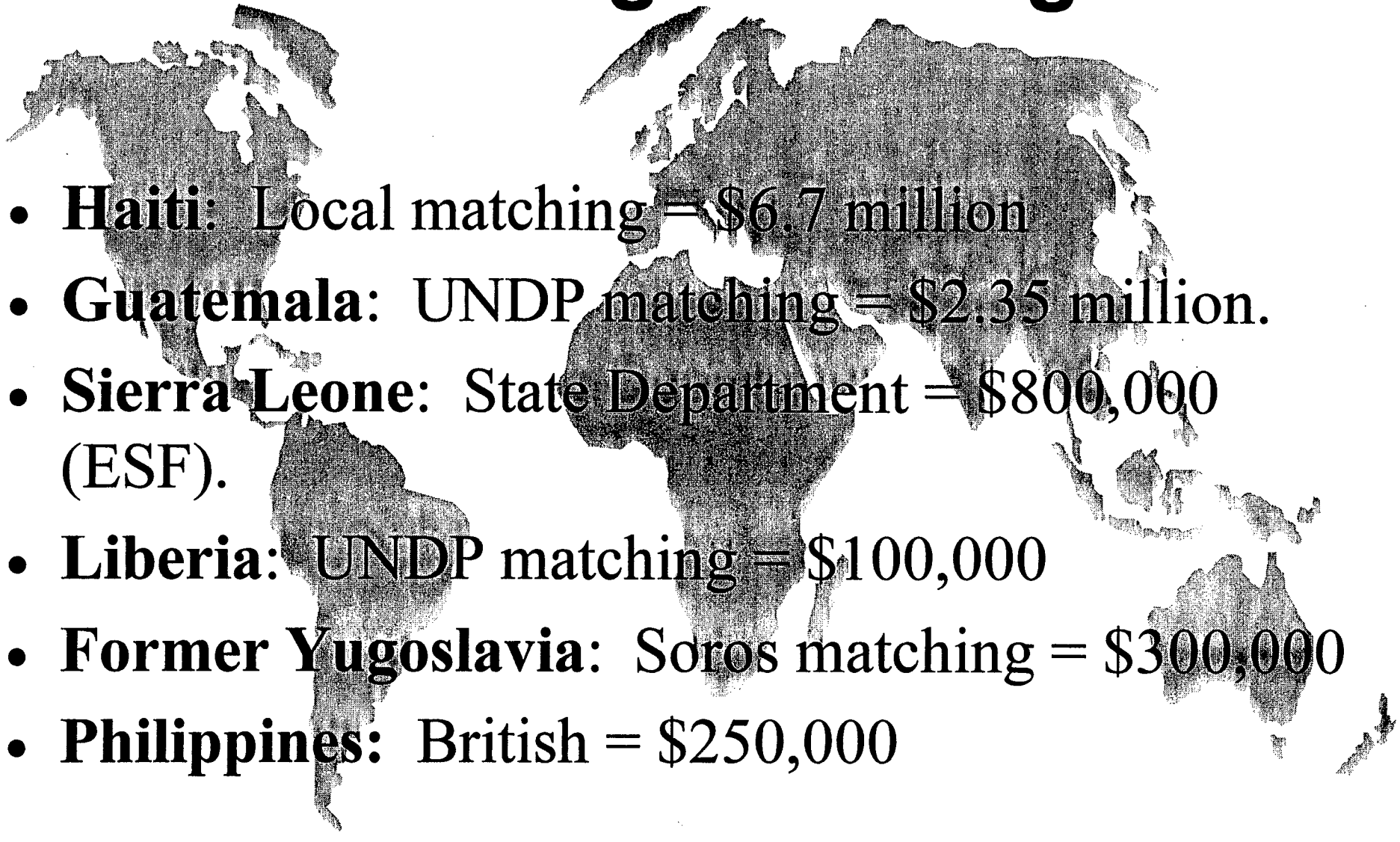
- Former Yugoslavia--expand current programs supporting the peace agreement ($6 million)

Guidance for Strategy Development



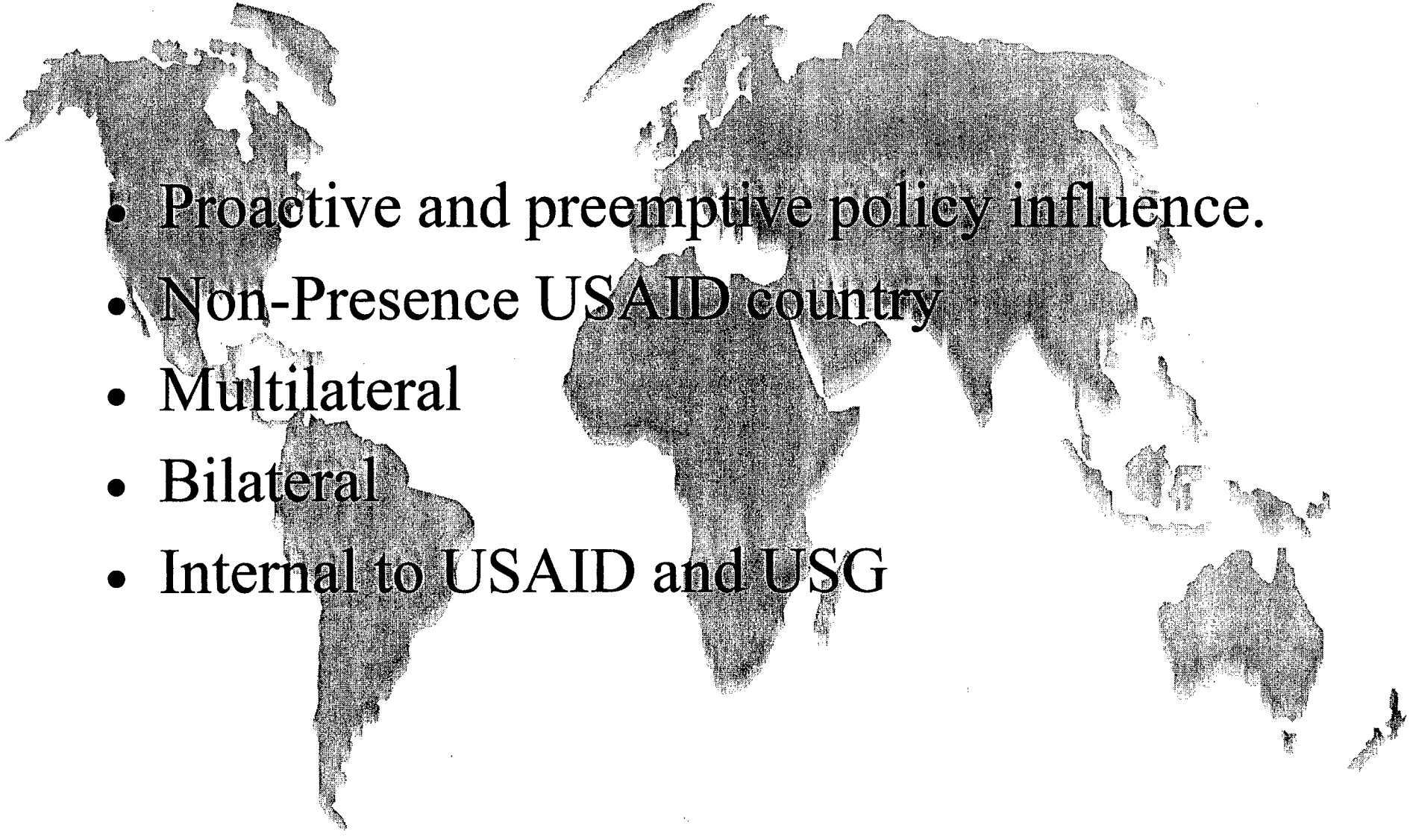
- Agree on strategic framework prior to field deployment.
- Focus on core political issues that caused and perpetuate the crisis.
- Address attitudes and behavior vs institutional solutions.
- Look for ways to empower citizens.
- Design for unstable, high risk, environment.
- Demonstrate activity areas to reduce risk for follow-on (targeted pilot activities).

Leverage Funding



- **Haiti**: Local matching = $6.7 million
- **Guatemala**: UNDP matching = $2.35 million.
- **Sierra Leone**: State Department = $800,000 (ESF).
- **Liberia**: UNDP matching = $100,000
- **Former Yugoslavia**: Soros matching = $300,000
- **Philippines**: British = $250,000

Ensure Collaboration



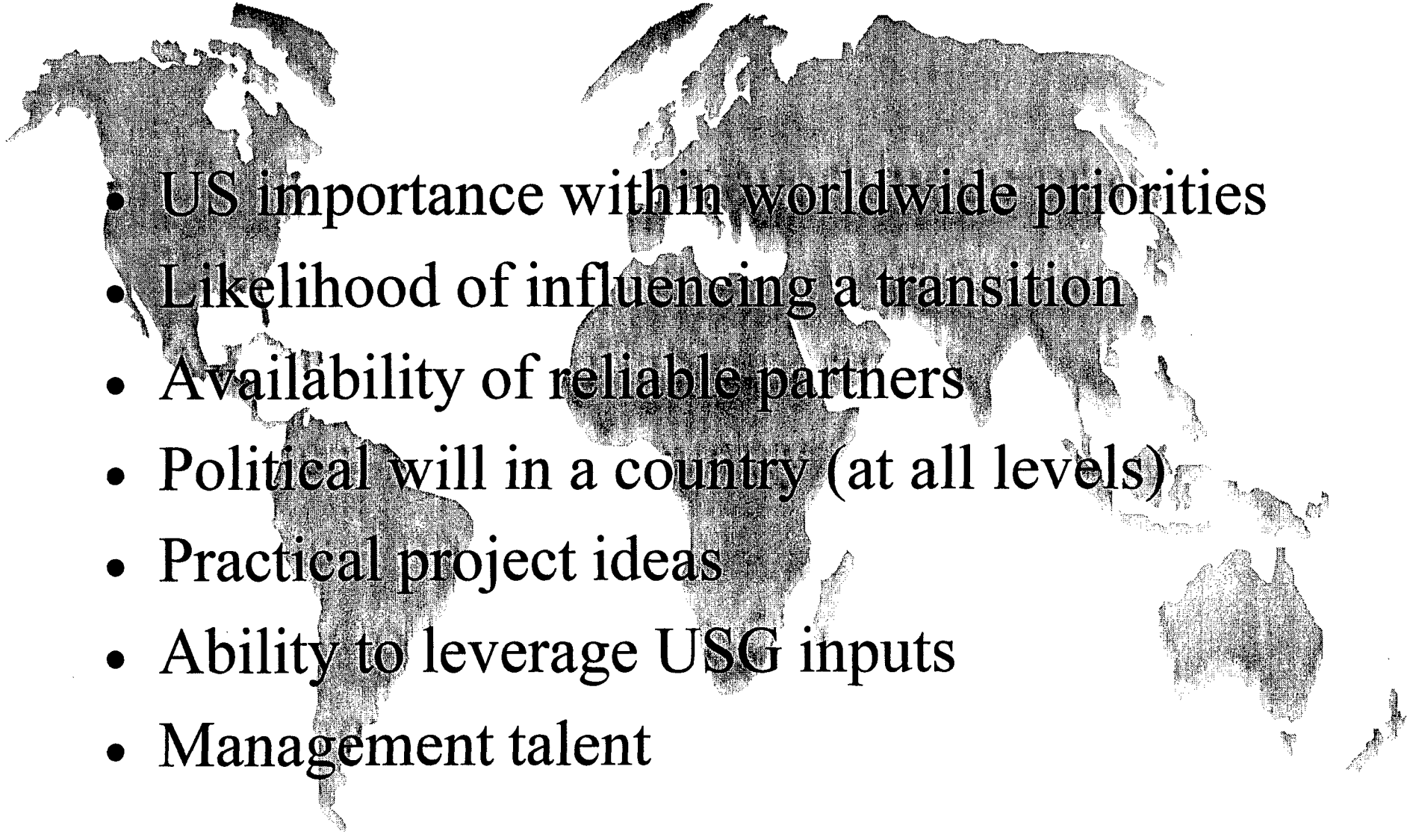
- Proactive and preemptive policy influence.
- Non-Presence USAID country
- Multilateral
- Bilateral
- Internal to USAID and USG

Following USAID'S Lead



- Britain
- Canada
- Denmark
- Holland
- Norway
- Switzerland
- UNDP
- World Bank

Management Guidelines



- US importance within worldwide priorities
- Likelihood of influencing a transition
- Availability of reliable partners
- Political will in a country (at all levels)
- Practical project ideas
- Ability to leverage USG inputs
- Management talent

USG Benefits

- Savings of humanitarian expenditures
- Enhanced linkages - relief → dev.
- Enhanced civilian alternative to military action
- Integrates resources + programs
- Enchanced capacity, transition knowledge + skills -

Transnational Threats (TNT) and CA Implications

COL Bill Duesbury

18 February 1997

Future Landscape (Trends) of Transnational Threats

- Continued globalization of economy, information and technology
- No match for U.S. conventional forces
  - Search by many for asymmetric response to US military dominance
  - WMD and covert actions
- Transnational threat will become more significant
  - Diminished authority and capacity of governments beleaguered by population explosion and transmigration, domestic disorder, ethic conflicts, and failed state services

Asymmetric Attack by Nonstate Actors

DSB Core

- Terrorism
- WMD
- Info War

Other

- Drugs
- Organized Crime
- Arms trafficking
- Refugees
- Environ damage

Some CA Challenges

- WWII mindset - Armageddon
- Functional specialties
- Force structure
- Intel avoidance
- Info Opns/War avoidance

Path of Rectitude

- Orient on TNT vice MTW
- Fix the force structure
- Support tactical warfighter
- Consequence Mgt expertise
- Embrace intel roles
- Active involvement in IO/IW

SOF FOR THE 21ST CENTURY

The Nature of Future Violent Conflict

As the millenium approaches, high-level American planning for future military conflict remains rooted in the conventional model and the experience of the Gulf War. Despite strenuous efforts to anticipate changes, the US Department of Defense sees future military conflict as conventional warfare, upgraded and improved by computer-driven information systems. This is reflected in a series of "vision statements" from the various US military services all tending toward the concept of future combat as rapid, large-scale and high technological. The idea of a high tech military future is based on the belief that the US will continue to fight Desert Storm-style, more-or-less conventional wars. If you believe that, the high-tech approach makes a lot of sense.

Unfortunately it contradicts virtually every prediction about both domestic and international security threats in the near term future. Observers from all fields are nearly unanimous in their belief that U.S. military forces will be deeply involved in the same morass of near-war or low intensity conflicts that have characterized the past fifty years. Military forces will be required to cope with a fast-changing political, economic and technological environment. Many, perhaps most, commentators (including some inside the DOD) believe that significant security threats will not be confined to big, easily identifiable enemies, but are more likely to arise from smaller, nimbler, and well-armed enemies who will fight "asymmetrically" -- attacking in ways that offset conventional military superiority.1 The kind of large-scale conventional mechanized combat presented in the various "vision" statements has happened to America's military forces exactly once in the past fifty years. This was the Iraqi war of 1991 annn
nd it lasted not quite six days.

During that same period, American soldiers have suffered through a mind-boggling variety of ambiguous, smaller-scale conflicts from Korea to Bosnia with stops along the way for Vietnam, Grenada, Panama, Somalia and Haiti. This array of lesser but messy, politically charged situations often straddled the gray area between uneasy peace and something that wasn't quite war - Rwanda, El Salvador and Nicaragua to name a few more. Generically, these ill defined, constantly shifting forms of conflict can be termed Unconventional Warfare because they do not follow the conventions of military conflict. Unlike conventional war, they are not usually waged by the professional armed forces of a state, warring forces do not usually attempt to seize and hold terrain and sometimes they are not even waged for a specific reason

There is a wide variety of unconventional threats, many lumped together by the U.S. Department of Defense as MOOTW - Military Operations Other Than War. They include but are not limited to humanitarian assistance, insurgency and counterinsurgency, noncombatant evacuation, counterdrug operations, shows of force, nation assistance, ensuring freedom of air and sea navigation, peace operations, disaster assistance, recovery operations, strikes and raids and more.

Since MOOTW is such a broad, inclusive category, this essay uses the term "unconventional warfare" (UW) to separate out political-military activities such as peace operations and insurgency from purely military activities such as strikes, raids and shows of force.2 In this use, unconventional warfare consists of those military activities conducted within a conflict environment that are not an immediate part of conventional warfare or directly supporting it. It includes humanitarian operations, complex emergencies, insurgency and counterinsurgency, some forms of subversion, sabotage and similar activities. It is distinguished from conventional warfare chiefly by the fact that UW does not primarily seek to defeat or destroy enemy military forces in combat.

Conventional forces can easily conduct many MOOTW tasks, e.g. freedom of navigation missions or strikes and raids. However, some situations involve complex combinations of missions such as a peace operation, humanitarian or disaster assistance, nation assistance and perhaps even counterinsurgency, all

occurring at once in the same area, often in a highly politicized environment. The Haiti intervention of 1994 and 1991's Operation Provide Comfort (N. Iraq) are examples of such missions.

Despite the prevalence of MOOTW and its subcomponent, UW, conventional war remains the focus of attention for the U.S. Defense Department. The clearest evidence of this attachment to conventional warfare is a report issued by then- Chairman of the Joint Chiefs of Staff General John M. Shalikashvili, in the fall of 1996. This took the form of a Joint Staff produced document called "Joint Vision 2010." Despite the title, "Joint Vision" did not attempt to anticipate the future in any substantial way.3 It did recognize the existence of a "a broad range of deterrent, conflict prevention and peacetime activities" and the comment is followed throughout the document by references to "full spectrum dominance".4 But "Vision 2010" presents a vision that has little patience with ambiguous threats. Instead, it offered a vision of information-enhanced conventional warfighting with technological superiority emphasized on nearly every page as the decisive element. In the report's Pentagon techo-jargon, the various cooo
omponents of technological superiority together create something called dominant maneuver, based on "precision engagement," defined as "..a system of systems" that allows US forces to locate and react to "the objective or target...generate the desired effect" and "re-engage...when required" 5

At the same time, the individual armed services quickly produced a series of reports, each promoting itself as essential to the Chairman's high-tech battlefield. The most notable of these was the Air Force report "Global Engagement: A Vision for the 21st Century Air Force" published in November 1996.6 The report took an extreme position that, contrary to long held military doctrine, ground forces were not always essential to win wars. Allegedly, air forces, using the kind of high technology, precision strike methods seen in the Gulf War, could eliminate the need for large-scale ground forces. Air Force Chief of Staff General Ronald Fogleman was quoted as saying "those who assert that only ground forces can be decisive are clearly wrong." 7

The Army Version

The US Army Chief of Staff General Dennis J. Reimer was less convinced that technological solutions were the final answer On 6 October 1996, General Riemer distributed a memo to the Army, warning against the "potential infatuation with precision engagement." "Too many people," he wrote, "are looking for the silver bullet, which makes war nice and clean and surgical. History shows that it doesn't exist..." The Chief later went on to repeat essentially the same comments in the Joint Forces Quarterly, a journal directed at senior officers of all the American military services.8
The Army's counterpart to "Joint Vision 2010" was "Army Vision 2010," an attempt to out-tech the other services with concepts like "battle space dominance" and "precision strike" enabling pin-point attacks with artillery and missiles. 9 The institutional Army apparently found it hard to come to grips with an ambiguous future and instead claimed a prominent role in the consensual high-tech future. The chief difference in the Army version was that it gave the dominant battlefield role to the Army.

Nor was this empty theorizing. The Army has been moving since at least 1992 to implement this vision as part of its Force XXI program. Most recently (1997) a series of trials were conducted called the Division Advanced Warfighting Experiment (AWE). This was, however, an "experiment" in name only. Plans are already underway to field this equipment throughout the Army's combat forces within two years. 10 But, unlike the Joint Chief's "Vision" statement, "Army Vision" at least makes more than a bare nod toward the idea that something other than conventional warfighting is important. For the first time, it clearly identifies an explicit Army responsibility for Military Operations Other Than War (MOOTW) secondary only to its responsibility to "fight and win the nation's wars." It is the only service to do so.

"Land force", Army Vision states "is also the force of choice to respond to natural disasters, assist communities during civil disturbances and perform civic action/ nation-building projects as required." This may seem a small concession but potentially at least it could be more than that. For the first time, there has been a clear statement at the highest Army level that MOOTW is not incidental to the real job of war-fighting but an important responsibility in its own right. Some commentators pointed to this as a revolution in Army thinking and an embracing of MOOTW.11 However, having said that MOOTW are important, "Army Vision" fails to follow through. In fact, it could be argued that the Army is moving away from MOOTW capabilities.

Briefly, the quality that makes conventional military units suitable for MOOTW is usually not their combat capability. It is their "incidental" and support capabilities (e.g. communications, transportation, aviation and logistics) and their manpower. AWE envisions smaller, tightly structured units maximized for high-tech "battle space dominance" and "precision strike" with a minimum of support elements. Such organizations will be severely handicapped in trying to carry out most forms of MOOTW.

The component of the U.S. military best prepared for these conflicts is the Special Operations Forces (SOF). These specially trained forces consist principally of Army Special Forces (SF or "Green Berets") and

Rangers, psychological operations (psyop) units, civil affairs (CA) units, Navy SEALs and Special Boat units, Air Force Special Operations Squadrons and the various organizations that support all these elements.

This essay argues that, even without AWE, the conventional warfighting forces of the United States are not the best military forces for such missions. These situations are characterized by lack of a defined enemy, the need for persuasion, negotiation and even community leadership. This might sound like a strictly civil development problem, but widespread disorder and the presence of significant violent elements ready and perhaps eager to use deadly force also characterize these situations. SOF, especially Army Special Forces, civil affairs and psychological operations units provide the combination of capabilities required for such situations. Where, then, do these forces fit in the "official" future?

THE ROLE OF SOF IN THE OFFICIAL FUTURE

"Joint Vision 2010" mentions "land, sea and maritime" and even "space forces" but not special operations forces. It's central theme of "dominant maneuver" used to control "battle space" may have application to something other than conventional warfighting, but if so, it is not explained. SOF's role in this scheme, by implication, is as an element of the conventional force.

"Army Vision," on the other hand, makes explicit mention of SOF, at least Army SOF. "Army Vision 2010" identifies seven mission "categories" including a total of 19 specific missions. Except for five that are identified as "technical" missions, all include SOF.

According to Army Vision 2010, future missions and capabilities look like this:

Missions and Required Army Capabilities

- Defending or Liberating Territory
MRC.....HVY/LT/SOF
LRC.....HVY/LT/SOF

- Punitive Intrusion
Counter Drug.....LT/SOF/TECH
Counter Terrorism.....LT/SOF
Counter Proliferation.....SOF

- Conflict Containment
MOOTW.....HVY/LT/SOF

- Leverage
TMD..... TECH
Space Applications..... TECH
C4I Systems Integration..... TECH
Battlefield Awareness.....TECH

- Reassurance
Presence.....HVY/LT/SOF

- Core Security
NMD.....TECH
Counter Drug.....HVY/LT/SOF
Illegal Immigration.....LT/SOF
Crime in the Streets.....LT/SOF

- Humanitarian
Disaster Relief.....LT/SOF
Population Evacuation.....HVY/LT/SOF
Refugee Protection.....HVY/LT/SOF

Cooperation, Exchanges & Trng.....HVY/LT/SOF
(Taken from DA, Army Vision 2010, p. 8)

This chart has interesting implications for special ops. First is the lack of SOF exclusive missions. Except for counter proliferation, there are no missions that belong to SOF. The chart treats them as a part of the conventional Army along with heavy and light forces. Another implication stems from the number of mission categories identified for "light" units.

As of 1998 there are ten active duty Army divisions. Of the ten, only four can reasonably be described as "light" - the 101st Airborne (Air Assault), the 82d Airborne Division, the 25th Infantry and the 10th Infantry (Mountain). The first is essentially a light infantry division but is tied to the brigade of helicopters that give it the "Air Assault" capability that is its raison d'etre. The long lead-time to move the helicopters and their heavy support requirements make the 101st a poor candidate for most "light" missions. Likewise, the 82d Airborne is considered a "signature" division, used in contingencies such as Desert Shield to demonstrate American resolve by quickly placing ground forces in a conflict area. As such it is also not available for most "light" missions. This leaves the 25th and the 10th Mountain as the only useable, readily deployable light units. Both of these are small, two brigade divisions. The large number of missions performed by conventional forces (especially the lighhh ht divisions) in the last decade has resulted in severe stress on these units. This "operational tempo" shows no sign of decreasing. Both light divisions have been stretched thin, employed whenever contingencies arise including Somalia, Haiti, natural disasters along the Pacific Rim, etc. Even when heavy forces are the principle element in an other-than-war mission, as in Bosnia, elements of the 10th are often attached.

The overlap between light and SOF missions can be viewed as offering more opportunities for SOF employment, which is certainly true. Bu this can also mean that SOF will fill in for the absent or very over-stressed light forces, i. e. the badly overworked 25th Infantry and the 10th Mountain. If the Army loses a light division, as seems possible given anticipated force reductions, the situation will only become worse.12 Since it is unlikely that Navy SEALs or Air Force combat controllers will be able to help with the abundant large and small-scale light infantry missions, this leaves the Army's numbered SF groups as the only candidates. Furthermore, because of their relatively small size and lack of elaborate support structure, SOF is inexpensive in comparison to ordinary conventional units. In Fiscal 1997, the total SOF budget for all services was less than 1% of the total U.S. defense budget. 13 This can increase the temptation to use these organizations rather than recreate conventional structure.

What comes out of this analysis, simply, is that international competition and threats from other actors will continue to require military responses from the United States. Conventional, "Clausewitzian" war is unlikely to disappear. It is an incredibly powerful tool. Indeed, it is to a large degree responsible for the nation-state's triumph as the dominant system of political organization in the world. While it is certainly true that new means of power are emerging, and that non-state actors have increased importance, none of this necessarily means that nation-states will become obsolete nor that the direct application of military force will become useless or even unimportant. High-tech systems and information networks remain susceptible to physical destruction. Conventional units, capable of "putting steel on target" will be an important component of power for the foreseeable future.

Although conventional war threats will not disappear, they are likely to be less important. In any case it is unlikely that an enemy will soon appear who has a military capacity equal to that of the United States. In short, there is less need for high technology systems, especially weapons systems. There is however, more need for a force that can be placed in harms way when the nature of that harm is unclear and the source of it may not be obvious.

Even a brief glance at the daily newspaper suggests that there is a lot of potential work out there for an unconventional warfare (UW) force. Indeed, only resources and national policy considerations limit the number and degree of possible involvements. Meeting those challenges will require a capability to conduct those poorly defined forms of engagement here termed UW or Unconventional Warfare. However, to maintain and improve this capacity will mean incurring expenses in areas where the Pentagon prefers not to spend its money - training personnel in non-military skills.

The future anticipated by the "Vision" statements; suggests that the vast array of unconventional, "gray area" engagements going on are of marginal importance. Other-than-war threats continue to receive the obligatory mention and nod from conventional planners but there's not much heart in it. They often go on to argue

that these are tasks that can be done by any well-trained soldier. It is odd to believe that the best choices to prosecute these conflicts are an 18 year-old high-school graduate with basic combat training and a military specialist course, commanded by 23 year-old officer who has completed a basic officer course and generalist training in some military field. There is a better way and that way is with unconventional warfare forces. Specifically, Army Special Forces, CA and psyop as the core element, supported by other SOF and conventional units as required.

FROM SOF TO UNCONVENTIONAL OPERATIONS FORCES

The military organizations most capable of conducting UW, and the only organizations with a sustained record of success in UW are the Special Forces, civil affairs and psyop units that collectively make up the US Army Special Operations Forces. In order to maximize the ability of the SF/CA/PSYOPS team to act as an Unconventional Operations Force, it will be necessary to disentangle the current mix of SOF missions and separate out those which are conventional from those that are unconventional. Special Operations Forces currently (1998) have nine principal missions and seven collateral activities.

Missions

Direct Action (DA)
Special Reconnaissance (SR)
Foreign Internal Defense (FID)
Unconventional Warfare (UW)14
Combatting Terrorism (CT)
Counterproliferation (CP)
Civil Affairs (CA)
Psychological Operations (PSYOP)
Information Warfare (IW)

Collateral Activities

Coalition Support
Combat Search and Rescue (CSAR)
Counterdrug Activities (CD)
Countermine Activities (CM)
Humanitarian Assistance (HA)
Security Assistance (SA)
Special Activities

(Taken from USSOCOM Fact Sheet, undated, provided courtesy USSOCOM December, 1996)

This list is a hodge-podge of conventional, unconventional and just plain odd missions, some of which are actually subsets of others. Unconventional warfare, as used in this list, is actually closer to guerrilla warfare. The list reflects a general willingness within the SOF community to accept almost any mission as one in which SOF can succeed. Many SOF commanders believe that, by accepting many missions, SOF demonstrates its fitness and remains competitive with other organizations in the struggle for a share of the diminishing military budget. This leads to the inclusion of things like demining which clearly is and ought to be a conventional military engineer mission. SOF, in particular Army SF, became involved because most demining activity in this context means instructing foreign military personnel in land mine and booby-trap removal.
The problem with things like demining is that they require significant amounts of training time to prepare the instructors and significant amounts of deployment time to conduct the training in what is essentially a duplication of an existing engineer capability. Other missions such as counterterrorism and special activities are so specialized or occur so rarely that they can realistically be accomplished by the small specialized joint service units (Special Mission Units) organized for the purpose and really should not concern the greater SOF community at all. Their inclusion as SOF missions serves only to lengthen the list of missions.

At least as explained in unclassified publications, counterproliferation is too vague to really allow anyone to focus resources on it. 15 It's inclusion seems to be intended to make a political policy point that the United States government opposes proliferation of weapons of mass destruction and will use "military power" to do so, when and if appropriate.

Still other missions, in which SOF has played a major role are not mentioned at all - for example Noncombatant Evacuation Operations. These are missions in which threatened US civilians and selected foreign nationals are removed from harm's way in situations such as the 1996 evacuation of Liberia.

Unscrewing the Inscrutable

Because, as noted earlier, the current mission list is a result of diverse influences (congressional legislation, bureaucratic fiefdoms, historical accidents, initiatives by the special operations community and so forth) and because some of those missions are vaguely defined, it is difficult to re-order them in a way that makes sense. What follows is an attempt to break apart the two chief types of missions that make SOF special and which result in much mission confusion.

Unconventional warfare missions include "special" activities that are not part of conventional warfighting. Army Special Operations soldiers supporting the creation of rural civil government in Haiti are carrying out an obviously "unconventional" mission of which ordinary soldiers would not be capable. This is what makes them "special" and unconventional.

The other group of missions is those that are more-or-less conventional activities but which are "special" because they are done at a very high level of proficiency and often in very difficult circumstances. A clear example of this second class of activity is that of the Air Force Special Operations Squadrons. When USAF special operations transports drop Army SF troopers, the basic difference between that and an ordinary drop of Army paratroopers is that the former is likely to occur in places or under conditions that would make an ordinary paradrop difficult or impossible. This makes them "special," but thoroughly conventional.

In the first case, unconventional warfare, it is the activities that are special. In the second case the missions are essentially ordinary conventional warfare activities, but it is the units that are "special" because of their unique equipment and high proficiency. Which missions are really special in the sense of different and which are those best carried out by a highly-trained conventional military force?

Building Unconventional Operations Forces (UOF)

Following the usage originated by Colonel Mark D. Boyatt, this essay now introduces the term Unconventional Operations Forces meaning those elements of US SOF most suited to perform unconventional warfare, chiefly Army SOF. 16 These are Army SF, psyop and civil affairs units supported by appropriate other elements. The long-standing practice of SF soldiers has been to regard civil affairs and psychological operations units as outside the "core" group of Special Operations Forces. Perhaps in some sense they are, but they are very important for most forms of unconventional warfare and therefore are "core" forces for Unconventional Operations Forces.

As Boyatt points out, the unconventional role consists in large part of assisting indigenous military and paramilitary forces in the conduct of a large slice of what are now considered SOF missions and collateral activities - foreign internal defense, guerrilla warfare, humanitarian assistance, nation-building and counter-drug missions. UOF then, are forces that "accomplish their mission through counterpart relationships. The only SOF specifically trained, organized and equipped to conduct these missions in this manner are the numbered Army Special Forces Groups." 17

Additionally, however, three of these roles: nation-building, guerrilla warfare and humanitarian assistance have a strong requirement for psyop and CA skills. Large-scale foreign internal defense missions would certainly benefit from CA and PSYOP participation and even counter-drug operations would find these capabilities useful.

Re-ordered Missions and Units*

1. Unconventional Warfare (UW)**- Army SF/CA/PSYOP

- Peace Operations (PO)
- Support to Insurgency (SI)
- Foreign Internal Defense (FID)
 --Security Assistance (SA)
 --Counterdrug (CD)
 --Humanitarian Assistance (HA)

2. Direct Action (DA) - Rangers, SEALs, SMUs, Conv Forces
- Raids, demonstrations, demonstrations of resolve
- Counter Terrorism (CT)
- Personnel Recovery Missions
- Countermine (CM)

3. Special Reconnaissance(SR)- Rangers, SEALs, SMUs
   Conv Forces

Collateral Activities

1. Special Activities including most classified national level missions - Rangers, SEALs, SMUs
2. Combat Search and Rescue - USAF Special Ops
3. Coalition Support - Conventional Forces***

General Support of SOF

1. Civil Affairs
2. Psychological Operations
3. Special Operations Aviation
4. USAF Special Operations
5. Navy Special Boat Units

* Information Warfare falls out as too poorly defined. As defined by USSOCOM, SOF counterproliferation missions("locate, identify, seize, destroy, render safe or transport WMD") are simply a special case of direct action. Combat Search and Rescue would become an Air Force Special Ops mission with assistance as appropriate by other SOF. For example, in areas where Army Special Forces were conducting UW, the SF would assist with downed-pilot or sensitive equipment recovery.

** Navy and Air Force SOF would provide some specialist training to their counterpart services in foreign nations as part of UW. Swimmer Delivery Vehicle Teams would remain a dedicated support asset of the Navy SEALs.

***Coalition Support, meaning liaison and confidence building would be accomplished by conventional forces. SOF, chiefly Army SF, if required, would carry out specialized training, as a form of security assistance.

Training Time

Now there is tendency, especially among those who like to call themselves common-sense thinkers, to say that all of the flailing about and confusion over definitions and mission categories is wasted energy. SOF, they might say, will continue to do whatever needs to be done. But, as usual, life is not so easy. Lack of appropriate training arose as an issue in both Operation Provide Comfort (N. Iraq) and Operation Uphold Democracy (Haiti). It is one of the reasons for the sense of frustration some SOF members feel about unconventional warfare missions. Elementary psychology tells us that groups and individuals function better if they have a sense of mastery of their task(s). That mastery stems from some combination of native ability, training and experience. Since ability is hard

to select for in this case (because we don't have a good definition of what we are looking for) the variable we can control to produce mastery with the most certainty is training.

In many respects, the question of what SOF does or ought to do comes down to training time. To expect a single organization, no matter how talented, to undertake missions as diverse and complex as those assigned to Army Special Forces is to expect the impossible. Missions like CT, DA and SR are interesting and widely respected, therefore they receive an undue amount of attention, to the detriment of the time and resources needed for other missions - especially something as complex and convoluted as "unconventional warfare". Language training and maintenance alone is time consuming enough.

But, it's hard to decide exactly what that training ought to consist of. Should SOF train in communications, marketing, knife fighting, psychology or negotiation and light weapons handling? Likewise, area specific training is very important for UW. But what areas should we anticipate and prepare for? What languages should be emphasized? This very difficulty probably accounts for a large part the tendency for SOF to gravitate back towards traditional military tasks and the comfortable, conventional model of warfare.

The current military intelligence system simply is not set up to provide that kind of detailed information, especially not on short notice. Intelligence officers and special operators both complain about the difficulty in obtaining even basic information about many countries in the world where sudden contingencies arise. The cure is to give the numbered SF Groups a real, carefully considered, regional orientation and force them to stick to it in planning and deployments. But it also means they will not be available for the current, full range of SOF missions as defined in current doctrine. The difficulty of defining appropriate UW training goes back in turn to the lack of definition that bedevils the whole area of UW. No wonder it is easier to devote training time to weapons rather than, for example, negotiation skills.

Developing an Unconventional Warfare Force

Why doesn't SF embrace UW (per the author's definition) as its principal mission? In part for the reasons above, because it is very hard to define and prepare for. But there are cultural reasons as well. UW missions are too often dismissed as "social work." Since the Vietnam War, part of the problem is the attractiveness of DA, CT and SR as missions. Such missions and the resulting image of deadly resourceful fighters is a principal reason soldiers undergo the extraordinary hardships of special operations training and duty. These commando-like activities are close to the conventional model of warfighting and have great appeal and thus tend to consume a disproportionate amount of the unit's attention and training time. In the words of one former SF battalion commander, "They are high visibility, immediate gratification missions, well within the comfort zone and easily identified with by most people."

The same missions can be performed by other SOF and some general purpose forces such as Marine Corps Reconnaissance units. Some special ops units, such as Delta, the Ranger Battalions and SEALs are often better trained, organized and equipped for these missions than Army SF. This is duplication that is hard to justify in a shrinking military. Furthermore, UW and its associated missions are sufficiently difficult and complex to require all the training time and resources available.

Finally, the game of "anything you can do, I can do better" in conventional warfare is too competitive and results in duplication of capabilities, accompanied by endless fruitless arguments as to which of the similar capabilities is really superior. The US Marine Corps is a primary competitor with the Army's Ranger Regiment for a variety of contingency missions. The USMC is already upgrading its demanding initial entry training program ("boot camp") by adding an additional five days called "Crucible Week" making it more similar to Army Ranger training. 18 Despite success in the "social work" side of the SOF business, it is not always popular with the operators who do virtually all of this work, Army Special Forces. In November and December, 1994 a series of interviews were conducted among US fores in Haiti by researchers from the Army's Walter Reed Research Institute. These psychologists asked soldiers from all specialties and all ranks captain and below, how they felt about their work in Operation Uppp
phold Democracy. Of the 3,205 soldiers interviewed, 147 were Army SF. Forty percent of the SF interviewed did not feel the mission was appropriate or important as compared to 22 percent of military police and 23 percent of intelligence personnel who felt similarly.19

Not surprisingly, the SF soldiers feelings were most strongly duplicated in the other combat arms (infantry, artillery and aviation) in Haiti. If nearly half of the SF soldiers involved in a typical UW mission like Haiti did not feel that it was an appropriate SF mission, clearly there is considerable disagreement among operators as to what Army SOF, in particular SF, ought to do.

From SOF to UOF

Unconventional operations forces can allow the US to compete in the arena of not-quite-war that I have termed "unconventional warfare". In most applications it will have the added advantage in a media-soaked political environment of being conducted routinely enough, in a sufficiently low-profile manner to attract little press coverage.

The SOF community in general and SF in particular have a tendency to spread themselves too thin. In an admirable display of "can do" spirit, SOF units tend to disparage what they call "hand-wringing" and boast they can do "anything, anywhere, anytime." To some degree this is even true. However, the fact that a unit can manage to accomplish a task does not mean that it is the best-suited unit or that training for peripheral tasks is the best use of its time.

The special operation's heritage from Vietnam, with its emphasis on conventional offensive warfare, direct action and strategic reconnaissance has played the SOF community, especially Army SOF, false. Despite the appeal of Direct Action, Counter-terrorism and Strategic Reconnaissance, the fact is that these missions seldom occur and when they do, they are usually the province of SMUs. Historically we have seen that while Army SF can perform these missions, they are not its forte. In Panama, Somalia and the Gulf War these missions tended to be given to SMUs, who in turn produced the most successful record of accomplishment.

The same historical record has also shown that Army SOF has a solid, unduplicated record of success at unconventional warfare functions. In the Gulf, in Northern Iraq, in Somalia, Panama and in Haiti they performed mission and scored successes that no other type of organization, military or civilian, matched or could match. Army SOF is the only type of organization, SOF or conventional, with the training, equipment and organization to conduct most types of UW missions.

However, It will require a real change in thinking, at the national policy level, within the special operations commands and in the Department of Defense to allow SOF to make the changes required for the warfare of the 21st century. At the highest levels, it will require a change in strategic thinking and policy making to accept UW and "gray area" conflict as an important arena, not peripheral to national interests but one that can have important, long reaching effects on the U.S. and its partners and allies. Changes will be needed in the way we acquire, process and disseminate intelligence so that information
needed for UW decisions is timely and available.

For the Defense Department, it means a serious, long range investment in personal training and education in a time when technology and hardware solutions are far more popular. Technology can no longer be allowed to drive strategy as it has in the development of "battlefield dominance" concepts and "precision engagement." De-emphasis of technology means that any changes will likely be made without the support of the major industrial suppliers who stand to profit from high-tech approaches.

At the joint and major service command level it means a difficult and time consuming effort to develop systematic approaches to these conflicts and translate those approaches into useable doctrine that will guide force development and training. It means a willingness to allocate scarce intelligence resources to the analysis of UW problems.

For the Army, it will require both re-thinking and reorganizing Army SOF. For example, it is probably necessary to break out two styles of CA and psyop units. One type would be dedicated to becoming the commander's interface with the civilian community, the other would be oriented toward more traditional functional areas. Psychological operations units need to become more effective in leveraging their role as wide-purpose information sources, developing the capability to quickly and effective act as an information link between military forces and the increasingly civilian environment in which they operate.21

Each of the five current active duty Special Forces Groups would receive a dedicated civil affairs company of the first type and a dedicated psychological operations company. Both would be configured for SOF operations.22 Since these are small organizations, less than forty persons each, they could be manned by re-designating unfilled Special Forces positions within the existing SF groups. Such dedicated companies would also be able to maintain a clear geographic focus and develop habitual relationships with the SF groups.

The present 96th CA Battalion and 4th Psychological Operations Group at Fort Bragg, NC would remain general support assets serving the entire Army. Because these are unique and valuable organizations, they might eventually joint organizations supporting the entire DOD. To some extent this is already occurring.

Within Special Forces it will mean a willingness to place much less emphasis on the image and skills of the commando and much more on the ability to apply military, civil and psychological capabilities at the tactical and

operational levels.

Most importantly, for all of these groups and organizations it means a shift in expectations. For the most part, UW is devoid of clean solutions and clear victories. Nor is it usually rapid. This means a willingness to accept lengthy commitments and incremental progress. None of these adjustments will be easy. But all of them are necessary and important if the United States is to survive and prosper in the complex and dangerous environment of the 21st century.

NOTES

1. A few examples include: Huntington, Samuel P. Strategic Imperative: New Policies for American Security (N.Y.: Ballinger, 1982). Fuentes, Gidget" Not Like Yesterday/ From The Commander's Mouth To The Marines' Ears" Navy Times-Marine Corps Edition 19 Jan 1998, (comments of Gen. Charles C. Krulak, commandant of the Marine Corps) and Alexander, Yonah. "Is the worst yet to come?" Jerusalem Post - Internet Edition, Thursday, January 8, 1998, 11 Tevet 5758. Prof. Alexander is director of the Inter-University Center for Terrorism Studies, Holon, Israel and Washington, D.C.

2. JCS Joint Pub 3-07, Military Operations Other Than War, (Washington D.C.: U.S. Department of Defense) 1995, p. ix.

3. Shalikashvili, John M. (General), Chairman of the Joint Chiefs of Staff, "Joint Vision 2010" (Department of Defense, Washington D.C.) 07 November 1996.

4. Ibid., p. 4.

5. Ibid., p. 21.

6. Fogleman, Ronald L. (General) Air Force Chief of Staff, "Global Engagement: A Vision for the 21st Century Air Force" November 1996.

7. Diamond, John. "Each Military Branch is Seeking to Promote its Future Importance" Philadelphia Inquirer, 23 November 1996, p.12. For an earlier example of this trend in Air Force thinking see the statement by then-Secretary of the Air Force Donald B. Rice before the House Armed Services Committee, 20 Feb 1992, released by the US Department of the Air Force under the title "Reshaping for the Future." Courtesy Department of the Air Force, US DOD.

8. Reimer, Dennis J. (General), Chief of Staff of the Army, "Balancing Dominant Manuver and Precision Engagement: A Strategy for the 21st Century," Joint Forces Quarterly (Winter 1996/1997), pp. 13-16.

9. Reimer, Dennis J., (General), Chief of Staff of the Army, "Army Vision 2010" (Department of the Army, Washington, D.C.) 13 November 1996, "the blueprint for the Army's contributions to the operational concepts identified in Joint Vision 2010."

10. "Spiral Development: Vital to Army's Future" US Army Training and Doctrine Command News Release, Fort Monroe VA, 1997, p. 2. Courtesy US TRADOC. General Reimer reiterated his faith in these concepts in remarks before the Institute of Land Warfare on 8 January 1998, Crystal City VA., sponsored by the National Military Industrial Association.

11. Preston, Patrick "Future Seizes Operations Other Than War" Army Times, 25 Nov, 96, p. 8.

12. As of 1998, the preferred alternative to losing a division seems to be reduction of existing division structure, reducing size and capability while still keeping the ten division "flags" in existence. This does not help solve the "op tempo" problem.

13. 1997 Joint Posture Statement - United States Special Operations Forces, U.S. Special Operations Command, McDill AFB, Tampa, FL. 1996

14. The U.S. DOD definition of unconventional warfare differs from the author's definition. Per the 1997 Joint

Posture Statement - United States Special Operations Forces: UW is "A SOF principal mission involving a broad spectrum of military and paramilitary operations, normally of long duration, predominately conducted by indigenous or surrogate forces who are organized, trained, equipped, supported, and directed, in varying degrees, by an external source. UW includes guerilla warfare and other direct offensive, low-visibility, covert, or clandestine operations, as well as the indirect activities of subversion, sabotage, intelligence activities, and evasion and escape."

15. See for example ibid., p. 31.

16. Boyatt, Mark D. (Colonel), "From SOF to UOF," Student Research Paper, US Army War College, Carlisle Barracks PA, 1993, p. 7.

17. Boyatt, Mark D. (Colonel), US Army Special Forces, Deputy Chief of Staff, US Army Special Forces Command, personal correspondence with the author, 25 January 1997.

18. US News and World Report, "The Few, the Proud, the Smart, the Moral" 16 Dec 1996, p. 33)

19. Halverson, Ronald R. and Bliese, Paul D. "Determinants of Soldier Support for Operation Uphold Democracy" Armed Forces and Society, (Vol. 25 No. 1) Fall 1996 pp. 81-96.

20. This would have another advantage in that it would relieve the 96th CA Bn and the 4th POG from the need to maintain parachute qualified personnel or meet the other unique requirements of a special operations unit such as physical training.

21. The current (1998) operations of NATO's U.S. operated "Radio Mir" in countering anti-NATO propoganda in Bosnia is an early example of such operations.

22. This would also relieve the general support psyops and civil affairs units of the need to maintain some training overhead skills such as parachute qualification.

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PROJECTING REQUIREMENTS FOR CIVIL AFFAIRS MISSIONS

Analytic and Archival Software for Mission Planning, Training and Support

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DynMeridian, a Wholly-Owned Subsidiary of DynCorp Information and Engineering Technology

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WHERE DO REQUIREMENTS COME FROM ?

- **Over-arching concepts, exs:**
  - "AirLand Battle" (USA and USAF, 1982)
  - "From the Sea" (USN, 1994)
- **Doctrinal capstones, exs:**
  - "Operations" (Army FM 100-5, 1983, revised 1988, revised 1993)
- **Operational case studies/lessons learned, exs:**
  - "The Holloway Report" (Joint Staff, 1984, post-Grenada)
  - "Somalia After-Action Report" (Joint Staff, 1994, post-Somalia)
- **Enduring missions, exs:**
  - "Sea Control" (USN, 200 years +)
  - "Forcible Entry" (USMC, 200 years +)
  - "Air Superiority" (USAF, 75 years +)
  - "Special Operations" (SOF, 50 years +)

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MISSIONS-TO-TASKS ARCHITECTURES

- **Most Fundamental Structure for Mission Knowledge**
  - Essential "backbone" of logic which guides mission implementation
  - Missions-to-tasks structures are very robust; seldom change
  - Doctrine, training, and other implementation systems change often
- **Primacy of Missions-to-Tasks Now Recognized**
  - JCS Universal Tasks List; CINC joint Mission Essential Tasks Lists
  - Naval, Coast Guard, and Marine Corps Integrated Task List (NITL)
  - Army Tactical Tasks List; USAF major command task lists
- **Crucial Startpoint for Developing Requirements**
  - To establish purposes, boundaries, structure and implementation
  - To greatly accelerate work of planners, developers and trainers

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SOF MISSION: SPECIFIED AND IMPLIED TASKS

- Civil affairs
- Counter-proliferation
- Counter-terrorism
- Direct action
- Foreign internal defense
- Peacekeeping & humanitarian affairs
- Psychological operations
- Special reconnaissance
- Unconventional warfare
- (Others)

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20 CIVIL AFFAIRS FUNCTIONAL AREAS

- **Government**
  - Civil Defense
  - Labor
  - Legal
  - Public Administration
  - Public Education
  - Public Finance
  - Public Health
  - Public Safety
  - Public Welfare
- **Economic**
  - Civilian Supply
  - Economics and Commerce
  - Food and Agriculture
  - Property Control
- **Public Facilities**
  - Public Communications
  - Transportation
  - Public Works and Utilities
- **Special Functions**
  - Arts, Monuments and Archives
  - Civil Information
  - Cultural Affairs
  - Dislocated Civiliians
- **[Note]**
  - FM 41-10, now being re-drafted, reorganizes the 20 areas into 16, including "emergency services" & "environmental management"

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DYNTASK ENABLES PEOPLE TO:

1. Streamline decision-making and implementation
2. Foresee task requirements & impacts before action
3. Forget nothing -- archive & access myriad data
   -- Capture institutional memory directly at the task
4. Strengthen mission-based thinking (culture impact)
   -- Focus on what is to be done, not personalities
   -- Embed policy and procedures in opns. & tng.
5. Enrich planning, training, analysis and support

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WHAT DYNTASK COULD DO FOR CIVIL AFFAIRS

- **Streamline area studies and mission planning**
  - Identify & structure every CA task -- manipulate full tailorable METL
  - Capture lessons learned and institutional memory directly at tasks
  - Link METL directly with implementing policies, formats, archives, etc.
  - Then isolate task-driven requirements for training, systems, etc.
- **Tailor on-line training and distance learning tools**
  - Archive on-line policy/procedures/training for distance learning
  - Tailor operations/training tools for specific warplans and regions
  - Tailor operations/training tools for generic specialties, e.g. health
  - Embed performance criteria for standardized exercise evaluation
- **Archive and structure key data for distributed use**
  - Distribute JTF Civil Affairs policies & procedures to organic units
  - Provide "Leave-Behind" packages for allies, host nations, others

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SUMMARY

- **DynTask offers breakthrough to rapidly analyze, plan and support complex missions and activities**
  - Complete over-arching missions-to-tasks architecture for analysis of operations, doctrine, training, support and requirements
  - Comprehensive foundation for professional education, systematic skills training, and related policy and procedures
  - Streamlined mission planning and preview of mission implications
- **Focuses on integration of effort and critical tasks**
  - Tailored to any application by embedding policies and procedures, implementation templates and other technical/support data
  - Offers robust and flexible archive of institutional memory for field or headquarters users, in various fixed site, mobile or on-line formats
  - Structures mission data to exploit the full benefits of automation, for distributed users, inter-agency environments, or US-allied contexts.

BRIEFING NOTES ON "PROJECTING REQUIREMENTS FOR CIVIL AFFAIRS MISSIONS"

Presenter: COL (USA, Ret) Church Hutton
DynMeridian [tel: (703)-461-2256]

SLIDE 1. "Projecting Requirements for Civil Affairs Missions"

SLIDE 2. "Where Do Requirements Come From?"

Requirements are the critical start point for all types of force modernization investments: i.e., for new or changed doctrine, organization, training, leadership, material and soldier systems, not just hardware. Requirements have historically come from one of four sources, as noted here.

The point of the slide is to show that not all start points are equally robust. Concepts come and go, driven as they usually are by transient political or budgetary winds. Doctrinal capstones also change. Doctrine, after all, is only accumulated wisdom on the best way of executing a function. Operational studies and lessons learned have also been a start point -- and they are even more situational. By contrast, missions are extremely robust -- some are over 200 years old. Examples:

Durability is critical because requirements lead to investments: money, systems, structure -- and those outcomes cannot be changed easily. We need to build requirements on rock not sand to get real value for investments, and insulate them as much as we can from the gusts of personality and political whim. Enduring missions are the only sensible place to begin the requirements process.

SLIDE 3: "Missions-To-Tasks Architectures"

We have always known intuitively that missions and tasks drove requirements, but it has only been in the last 10 years that we have gotten serious about trying to model mission-to-tasks logic. Such fundamental structures of mission knowledge are durable, complete, and over-arching, while the systems such as doctrine, training and hardware which implement them change often.

Thanks in good part to the efforts of GEN Shalikashvili, who pushed to develop the Universal Tasks List, all the Services now realize the primacy of missions-to-tasks structures. All are now building such architectures as the crucial start point for developing requirements.

SLIDE 4: "SOF Mission: Specified and Implied Tasks"

Here is an example of how Special Operations breaks into specified and implied tasks. Notice that most tasks have been on this list many years. They are generic, not situationally specific. And new tasks often represent old wine in new bottles. New tasks as CP and PK, for example, include many sub-tasks which are quite familiar from Direct Action, CA and PSYOP.

SLIDE 5: "20 Civil Affairs Functional Areas"

And here is the further breakdown of the Civil Affairs task. Most of these areas of function have been around at least 25 years. They are not dependent on any one CA scenario -- they derive from the aggregate of all CA scenarios. They offer a reasonable framework from which to think about framing requirements, and making the huge investments which implementation implies.

DEMONSTRATION OF DYNTASK MISSIONS-TO-TASKS SOFTWARE

We in DynCorp have a rigorous methodology to break missions into tasks starting at any level, carrying them all the way down to the individual if needed. We can then automate that structure on a relational database, and link tasks directly with implementing imagery or guidance. We call the ensuing system "DynTask." It is an excellent start point for thinking about requirements.

This demo shows organization of SOF tasks by subject content, and then by operational phase. I will drill down into the task structure first by subject content -- that is the path of a headquarters whose role is to support combat, combat service, or combat service support functions. This is the path of the doctrine developer, training developer and material developer. Some examples:

- Doctrine developer -- can unfold all the tasks to assess where doctrine is needed, to establish purposes, boundaries, structure and implementation. Examples: fire support, reconnaissance
- Training developer -- can analyze all the tasks within a general function to design training modules that cross-walk directly from performance task to the training objective. Examples: dismounted land movement, crossing water obstacles, reading maps and aerial photos, etc.
- Material developer -- can dis-aggregate functions into all their constituent parts, identify high risk activities where technology could help, and can review where emerging technologies may be available. Examples: Protect Individuals from Harm, Use of Selected Equipment.
- Operations developer -- can see the functions for which orders formats and templates might be needed, and can attach them directly to the tasks. Example: Plans and Orders.
- Integrated developers -- can design integrated solutions to reduce risk, improve safety and facilitate dangerous tasks. Example: Exfiltration.

The point is that developers cannot frame durable requirements to implement any of these tasks until they have a clear view of the tasks themselves. Developing and manipulating an overall missions-to-tasks structure is fundamental to developing and framing durable requirements.

Understanding the operational phases of a mission is also extraordinarily useful to frame needs. A quick look at the phases side of the data shows functions phase-linked by time. Examples ;

- Actions of the Objective
- Infiltration

- Exfiltration

On this side of the database, the requirements community can think through every scenario for which it might have to design solutions. Developers can think through missions as if they were themselves mission planners or operators. They can look at every course of action, all internal risks, and see the METL for any specific situation. This can only accelerate and enrich thinking.

SLIDE 6: "DynTask Enables People To:"

DynTask is a relatively low-tech low-cost decision support system that produces huge asymmetric benefits. Here are some of them.

SLIDE 7: "What DynTask Could Do for Civil Affairs"

And here, in conclusion, is what a DynTask organized specifically for Civil Affairs could do.

SLIDE 8: "Summary"

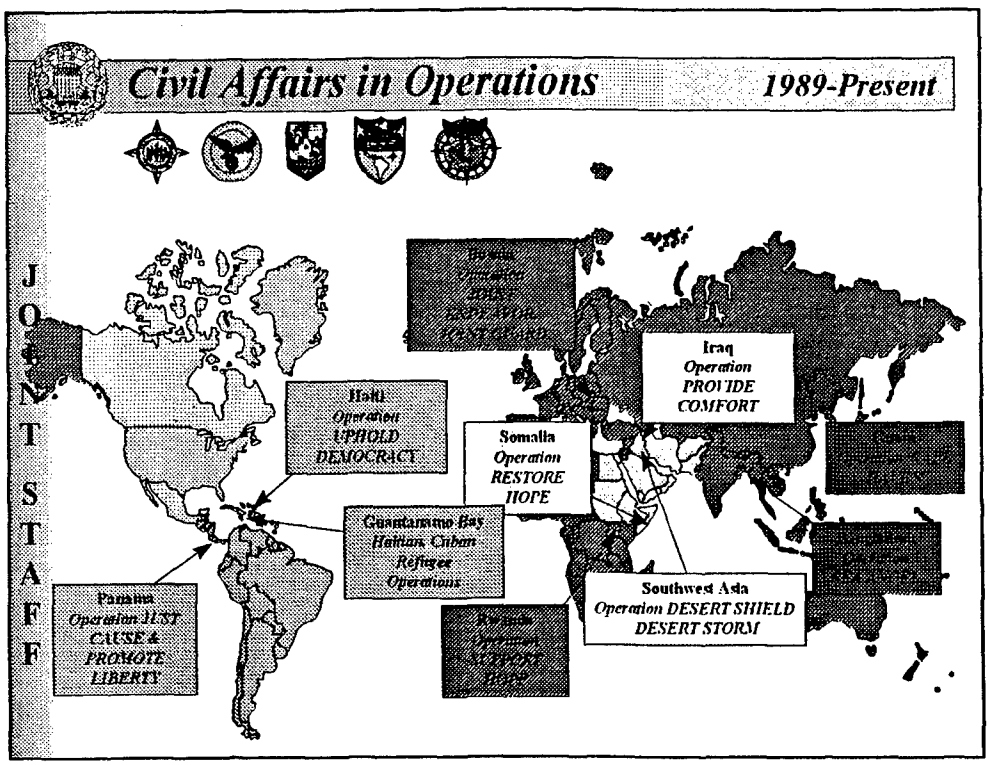
Thank you.



JOINT STAFF

DOCTRINE FOR CIVIL AFFAIRS IN THE FUTURE

Prepared by LTC Jan G. Papra, USAR, CA
Joint Staff J33/Special Operations Division



Civil Affairs (CA) is one of the most frequently deployed military assets.

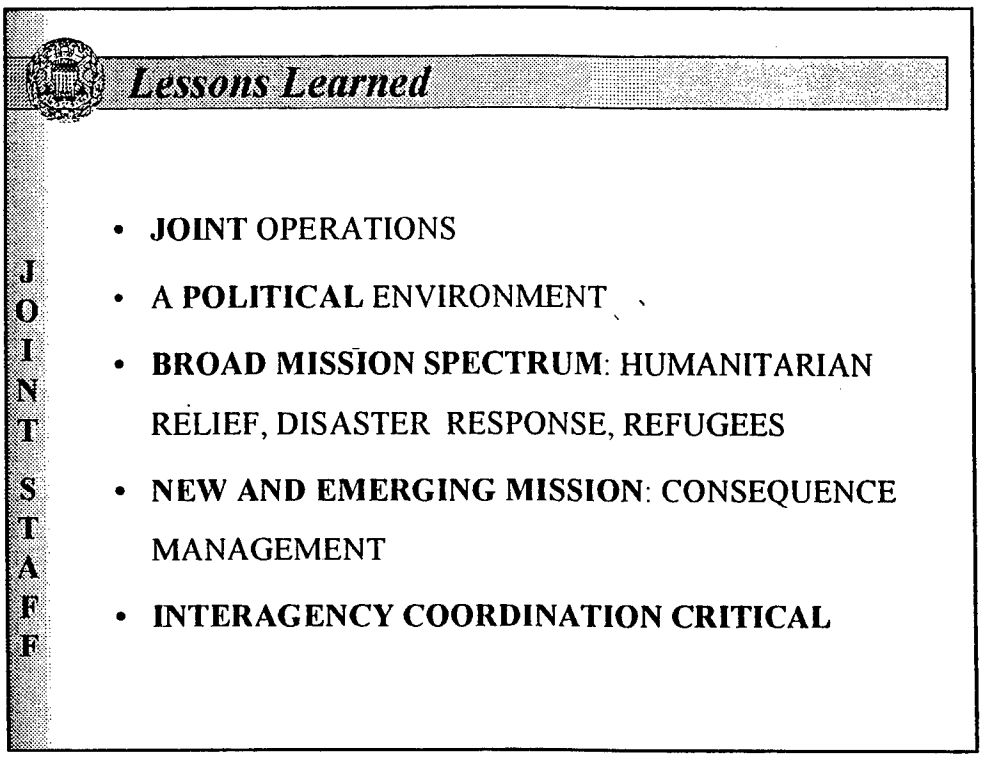
This slide shows the more significant and well known recent operations that CA has contributed to.

CA could adopt the American Express motto: "Don't leave home without us."

Almost every recent mission, and almost every foreseeable mission in the future requires the military to interact intensively with the civilian sector, and CA is the military force that is trained and ready to do that.

In the process of conducting the missions above and many smaller ones as well, there have been many lessons learned about the environment that we will continue to be deployed in.

Understanding these lessons learned, and correctly accounting for them in doctrine, is what will allow the U.S. military to successfully continue it's interaction with the civilian sector in any part of the globe.



First, it is clear that we operate in a joint military environment. Our deployable structure of first choice is the Joint Task Force.

Second, the missions are planned and conducted with intensive political input and oversight.

The missions come from within a broad spectrum. Nonetheless, the focal point for CA is that they all concern the civilian sector: it's people, institutions, and infrastructure.

The spectrum of missions is actually increasing through the emergence of new threats. CA will be involved in a new mission called Consequence Management, which is the military response to the use of a weapon of mass destruction .

Somewhat new, and very important, is the requirement for the military to engage in coordination at the interagency level.

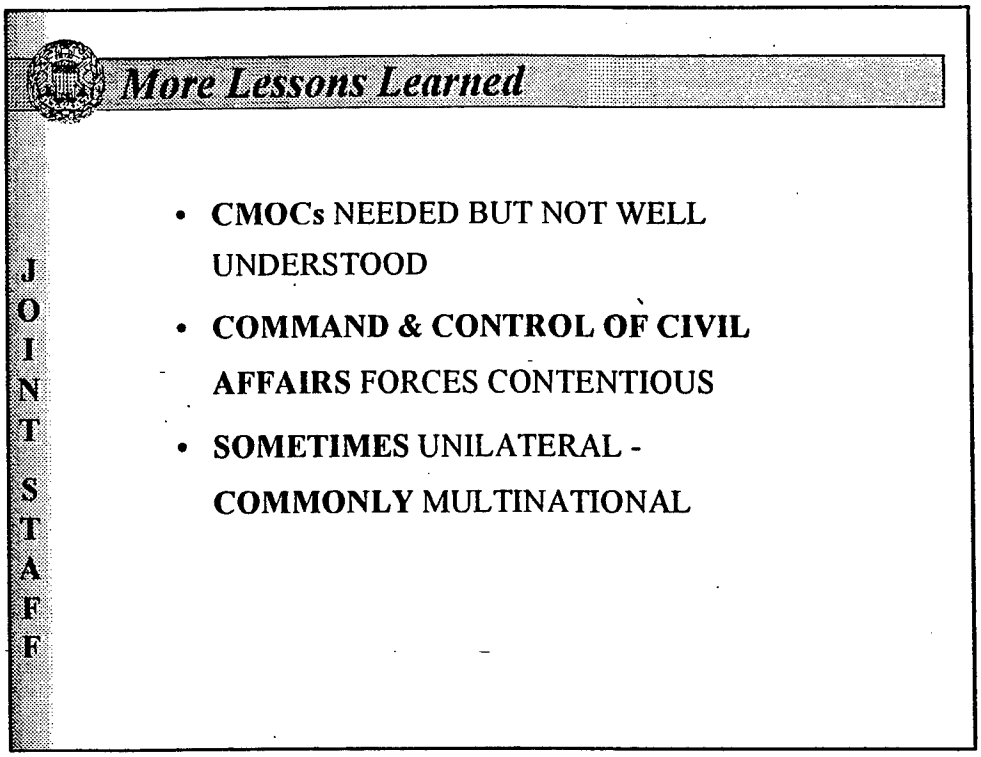


This picture comes from an interagency meeting in Bosnia, but the requirement for interagency coordination is pervasive.

Around the picture you can see the seals of some of the many agencies that the military now has to deal with during operations. They include the U.N., foreign bodies, and major U.S. agencies.

Included as examples are the seals of the World Bank, The European Economic Community, The U.S. Departments of Energy, Justice, and others.

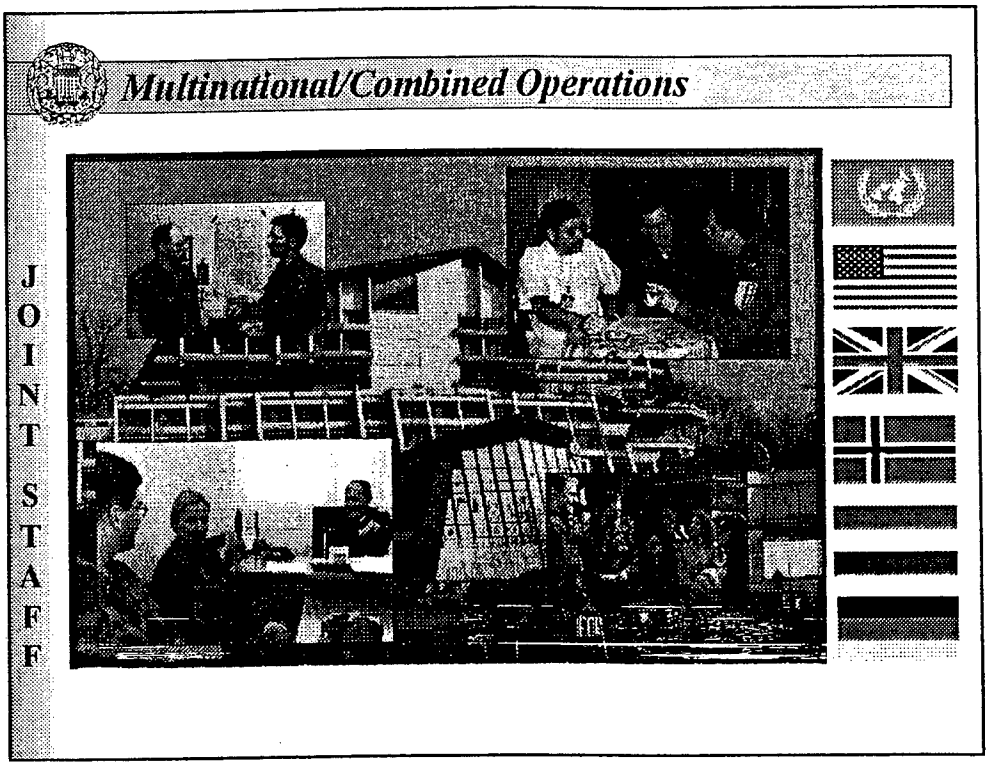
It has become a crowded battlescape. There are more civilian factors to account for than ever before. We do not engage in warrior vs. warrior missions anymore; in every equation there are now the many facets of the civilian sector.



The Civil Military Operation Center is a youngster spawned in the recent operations that were shown on the first slide. They are the means by which the military and the voluntary/charitable organizations integrate their efforts. While important, they are not well understood nor easily employed by commanders.

And while CA is a recognized requirement in operations, the command and control of the CA forces assigned to a JTF or other command has been contentious and uniquely applied in every operation. An effective, acceptable template is missing.

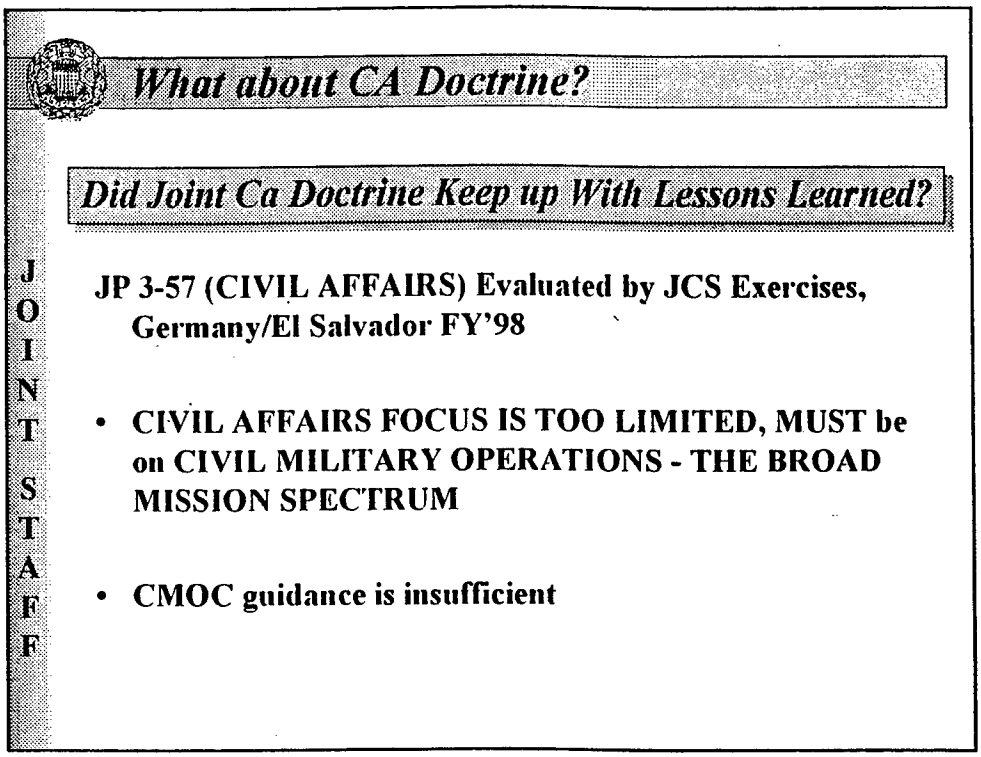
While a few operations have been unilaterally conducted by the U.S., the handwriting is on the wall. Most operations will be conducted as part of a coalition effort with the U.S. as one of several other engaged nations.



The slide depicts the multinational flavor of Operation JOINT GUARD in Bosnia, but there will be a multinational flavor to most operations in the future.

Multinational operations raise the significant challenge of interoperability. Different nations have differing doctrine, forces and procedure. U.S. CA cannot simply proceed on it's own course, we have to accommodate ourselves to a degree to the practices of our allies.

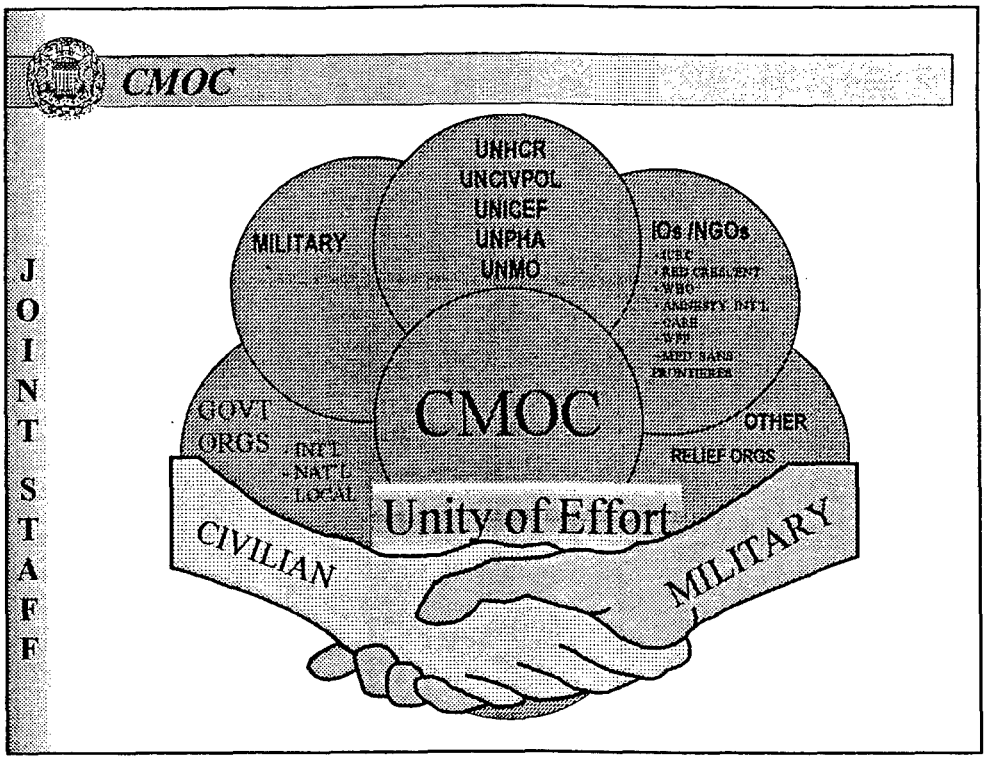
Our doctrine has to provide information and guidance to help our forces function successfully in the new shared environment.



These lessons learned from operational experience have outpaced the doctrine which is responsible for guiding the conduct of operations.

The first indication came during the evaluation of the two Joint Staff directed exercises noted in the slide. Commanders and staffs noted that they needed more than guidance about civil affairs in publications, they needed guidance on the overarching concept of dealing with the civilian sector, or in other words, Civil Military Operations.

At a micro level, they identified a doctrinal insufficiency for the use of a Civil Military Operations Center, which they saw as a key factor in future ops.

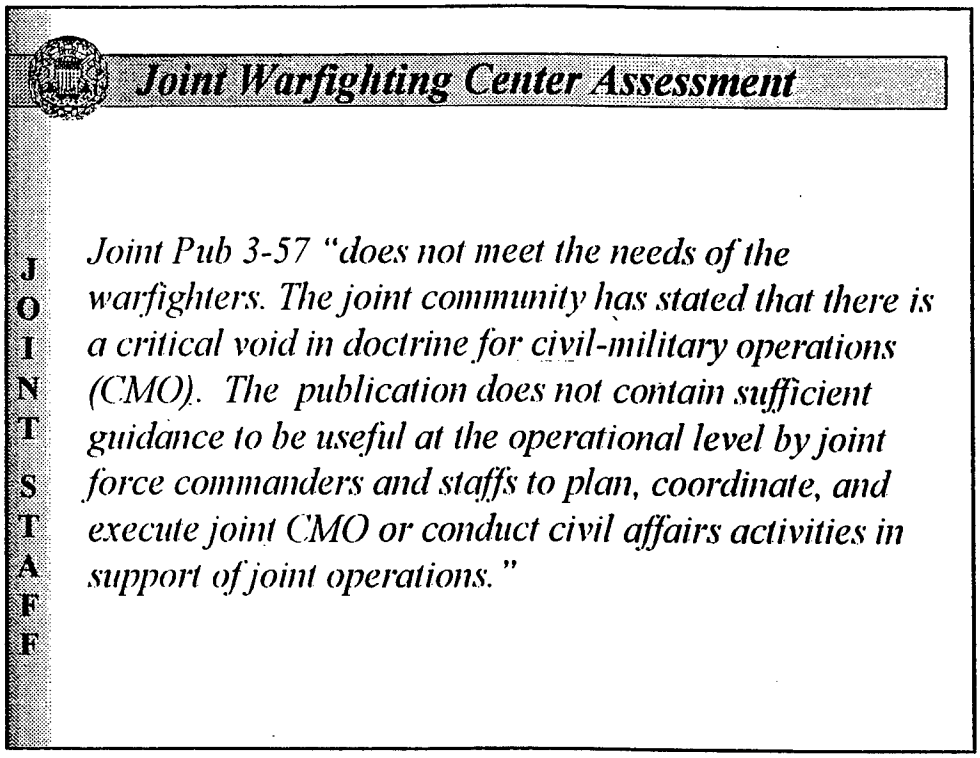


For those unfamiliar with the CMOC, it is a military initiated gathering of many of the civilian sectors that contribute to the resolution of a crisis.

Voluntary/charitable agencies are clearly involved, as are U.N. and host nation institutions. The purpose of it is to integrate all these actors with the military.

The military will use their capabilities to leverage the work of the civilian agencies. The success of the civilian agencies is what eventually will allow the military to exit.

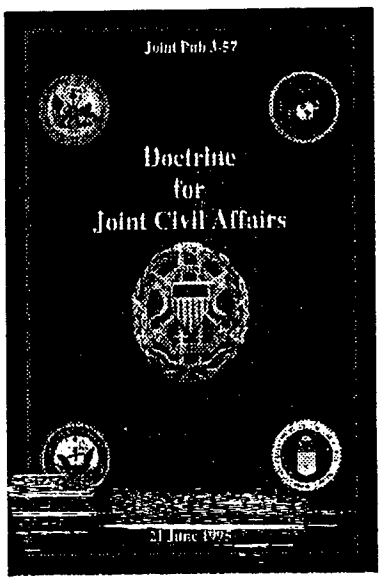
Having gotten a sense that JP 3-57 needed at least some work, J-7 asked the Joint Warfighting Center at Ft. Monroe, VA to undertake a thorough analysis of how well 3-57 served commanders and staffs.



The Joint Warfighting Center concluded that 3-57 did not meet the needs of the warfighters. The focus on civil affairs was too narrow to help them deal with the comprehensive nature of the military interaction with the civilian sector.

Summary of What 3-57 Failed to Address

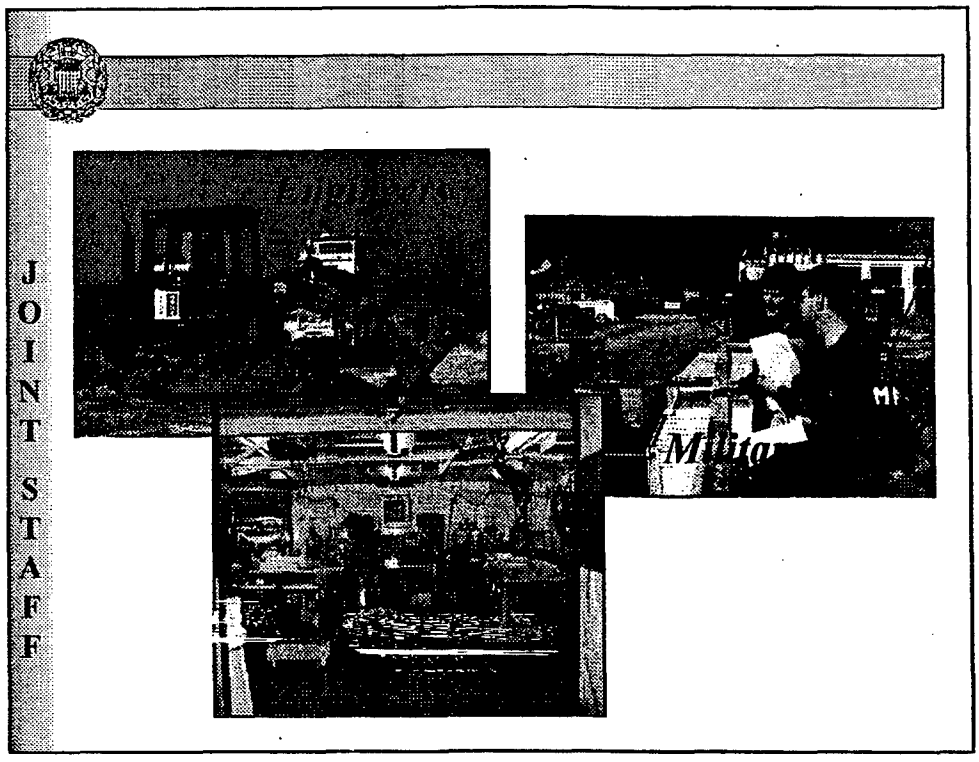
JOINT STAFF



- **Interagency Coordination**
- **Multinational/combined ops**
- **CMOCs**
- **New mission: Consequence Management**
- **Focus on Civil Military Operations, not solely the CA Force and Tasks**
- **All Services Perspective**
- **Other major players, who they are and what THEY do: *Engineer*, *Medical*, *Military Police* forces**

In addition, the Joint Warfighting Center noted that the current pub did not provide helpful guidance on most of the concepts that have been learned in recent operations.

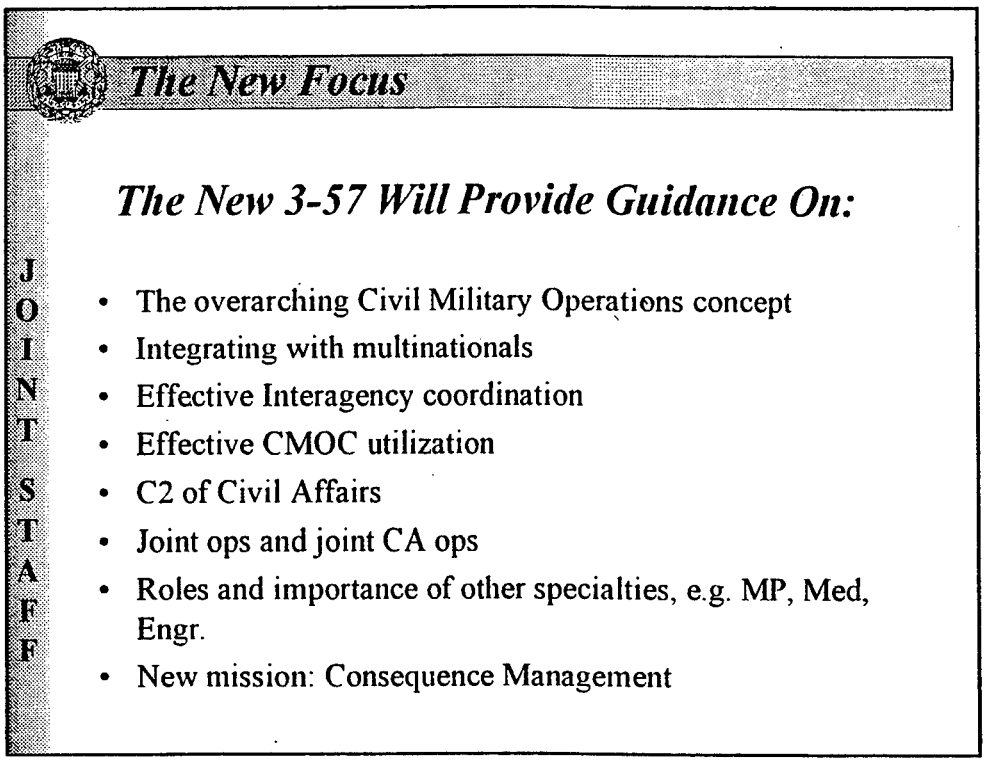
In addition to those lessons learned that I noted earlier, commanders and staffs expressed a real interest in key mission players other than CA.



The total military force structure is involved in recent operations. Some are more significant in civil military operations than others however.

Besides Civil Affairs, the three forces illustrated above are consistently and significantly employed in civil military operations, reflected by the frequency of their mission deployment.

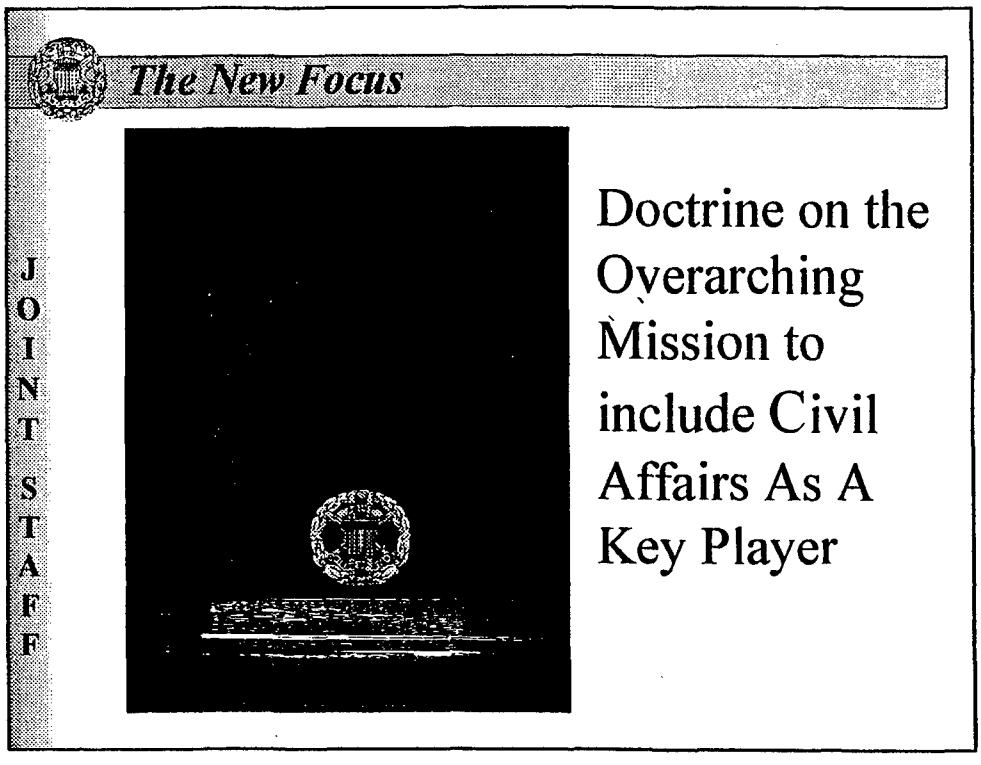
A revised 3-57 publication would take them into account along with Civil Affairs, and provide commanders and staffs with useful guidance on their most effective employment.



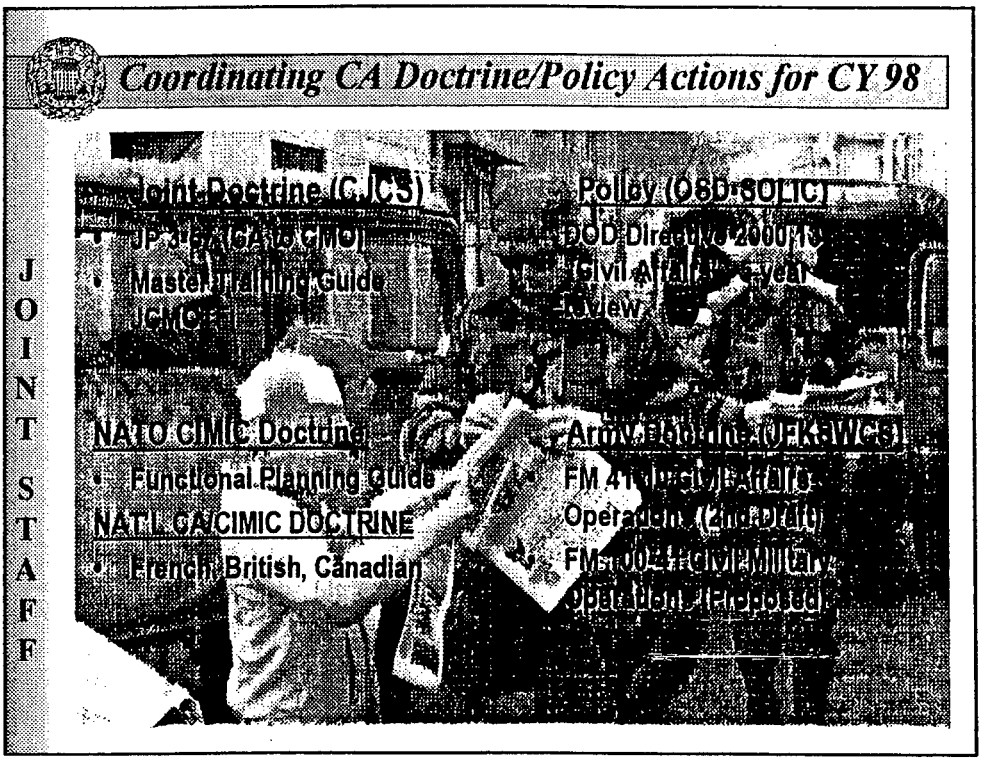
Here, in summary form then, is what we want to offer in the revised 3-57.

CA will be highlighted, but these newly identified concepts and issues will be thoroughly addressed.

The revision is on "Fast Track", which in doctrinal parlance means that the new pub is scheduled to be completed in 18 months. The first draft is requested for May of this year.



18 months from now, this is what Joint Pub 3-57 will be all about. It will be a vastly updated publication that will really address commanders requirements and lessons learned from almost a decade of operations.

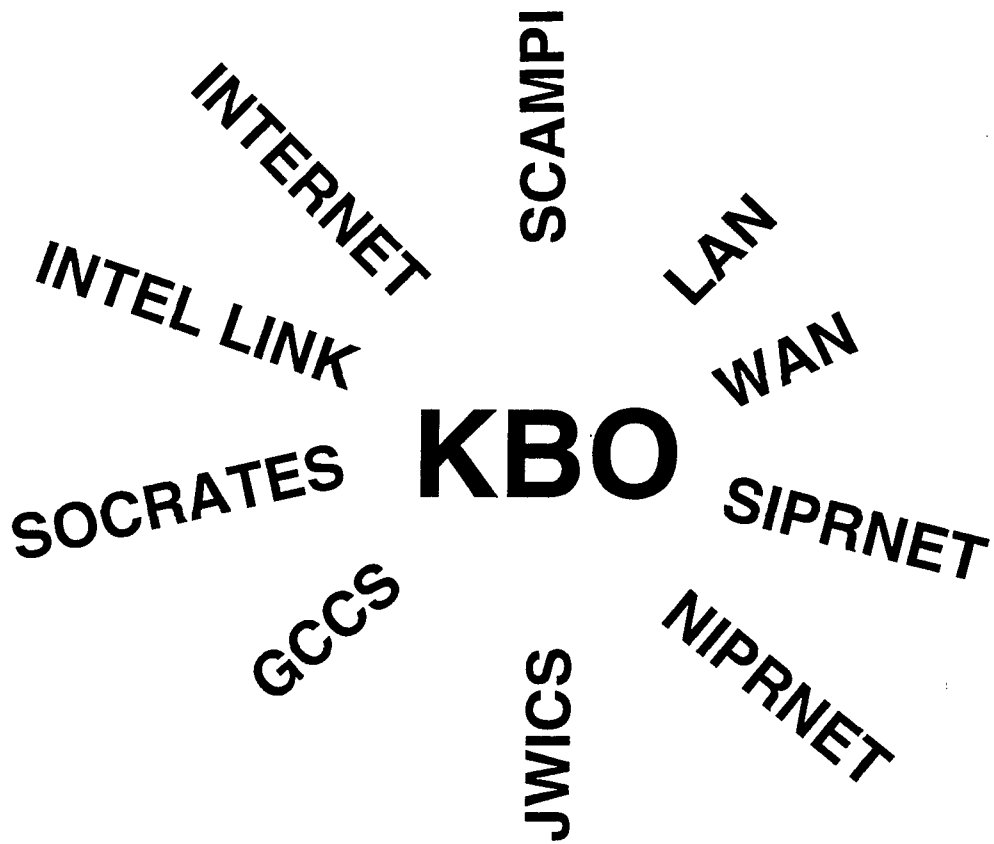


Finally, I want to note that in this calendar year, virtually every CA publication or document in DOD, along with related NATO doctrine, will undergo creation or revision.

Myself and the representatives of the other commands shown on this slide are making a concerted effort to integrate and coordinate our efforts. By the end of this year, we are looking for almost a clean sweep in terms of having a vital, current and useful doctrinal base for the conduct of civil affairs.

This concludes my brief and I would be happy to answer any questions in the follow-on discussion.

SOIO
MAJOR FOCUS AREAS



SOIO
MAJOR FOCUS AREAS

- C-R-C: Compatible-Reliable-Compliant
  - The phone is only good if the connection is made.
  - Assured Access
  - Ambassadors, CINCs, SOCs, SEA/AIR/LAND

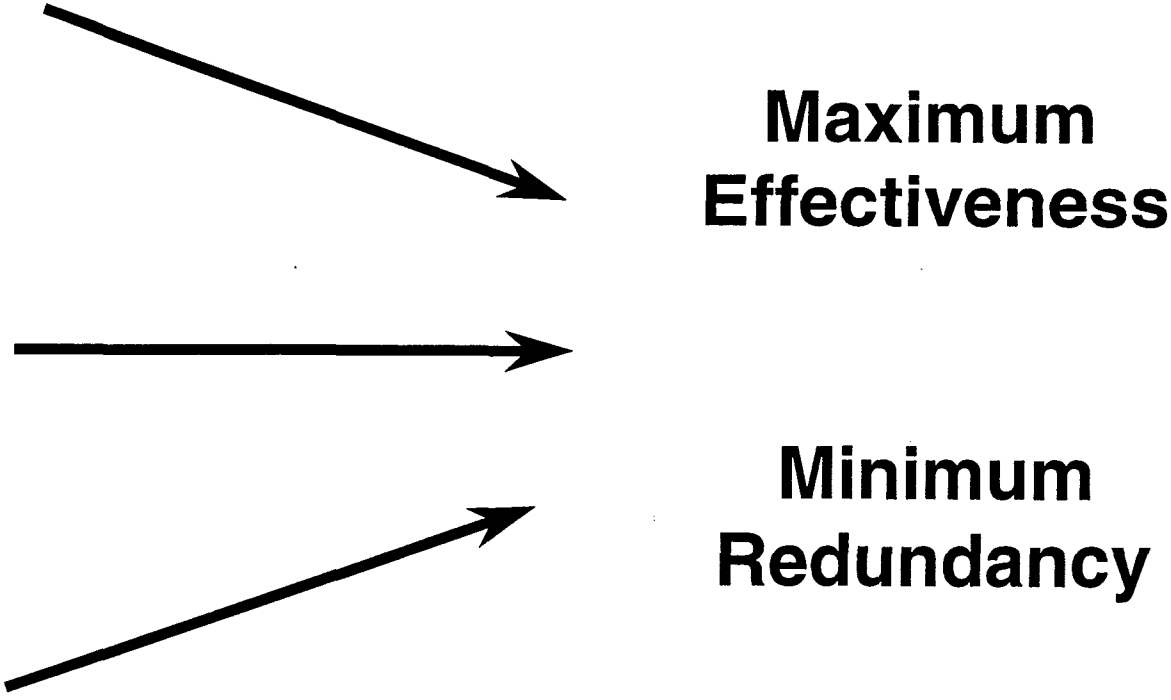
SOIO
MAJOR FOCUS AREAS

- **Trained for Tomorrow**
  - **New Threats**
  - **New Foes**
  - **New Missions**

"C4ISR is a Combat Function"

SOIO
MAJOR FOCUS AREAS

- Leverage -- Not Duplicate
  - C4ISR
  - Compatibility
  - Information
  - Analysis
  - Comms
  - INFO Weapons
  - R & D
  - Tactics
  - Doctrine



SOIO
MAJOR FOCUS AREAS

- Value Added
  - Guide for All Actions
  - Control Time

"If it doesn't do it faster it isn't worth the investment"

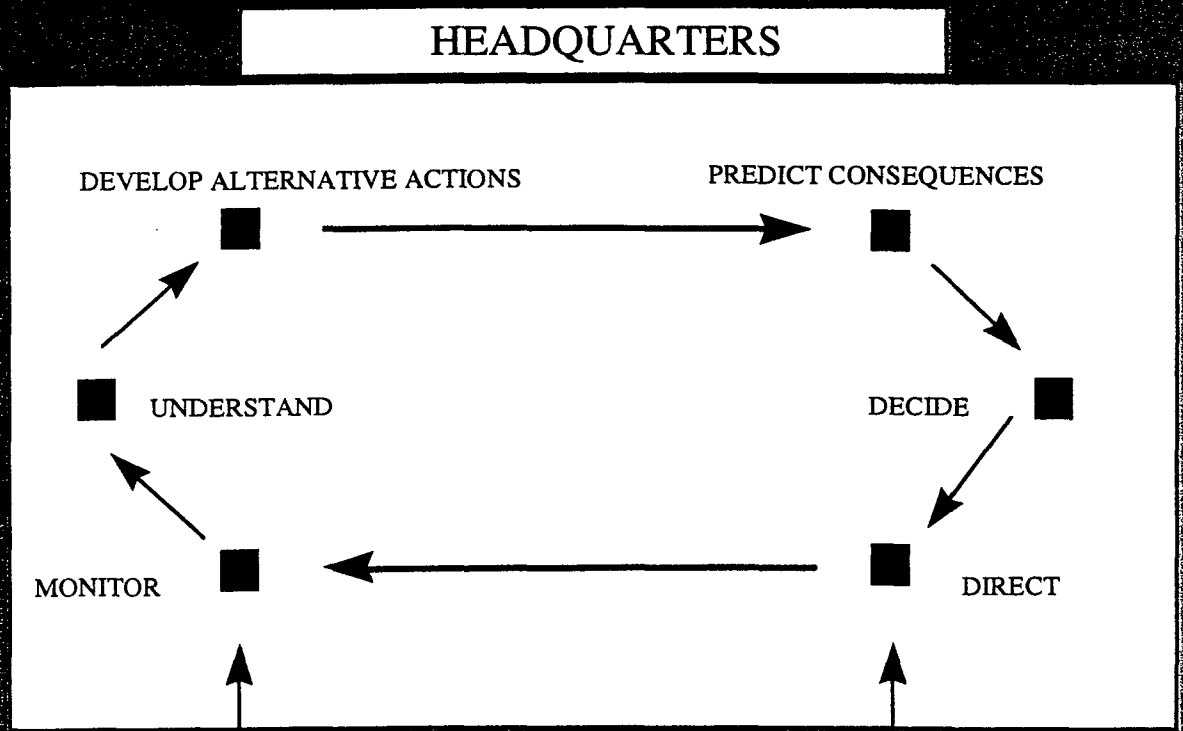
C4I Evolutionary Trends

Presentation to
Ninth Annual
Special Operations/Low Intensity Conflict
(SO/LIC)
Symposium and Exhibition

Presented by
RADM Gary Wheatley USN (Ret.)
Evidence Based Research, Inc.

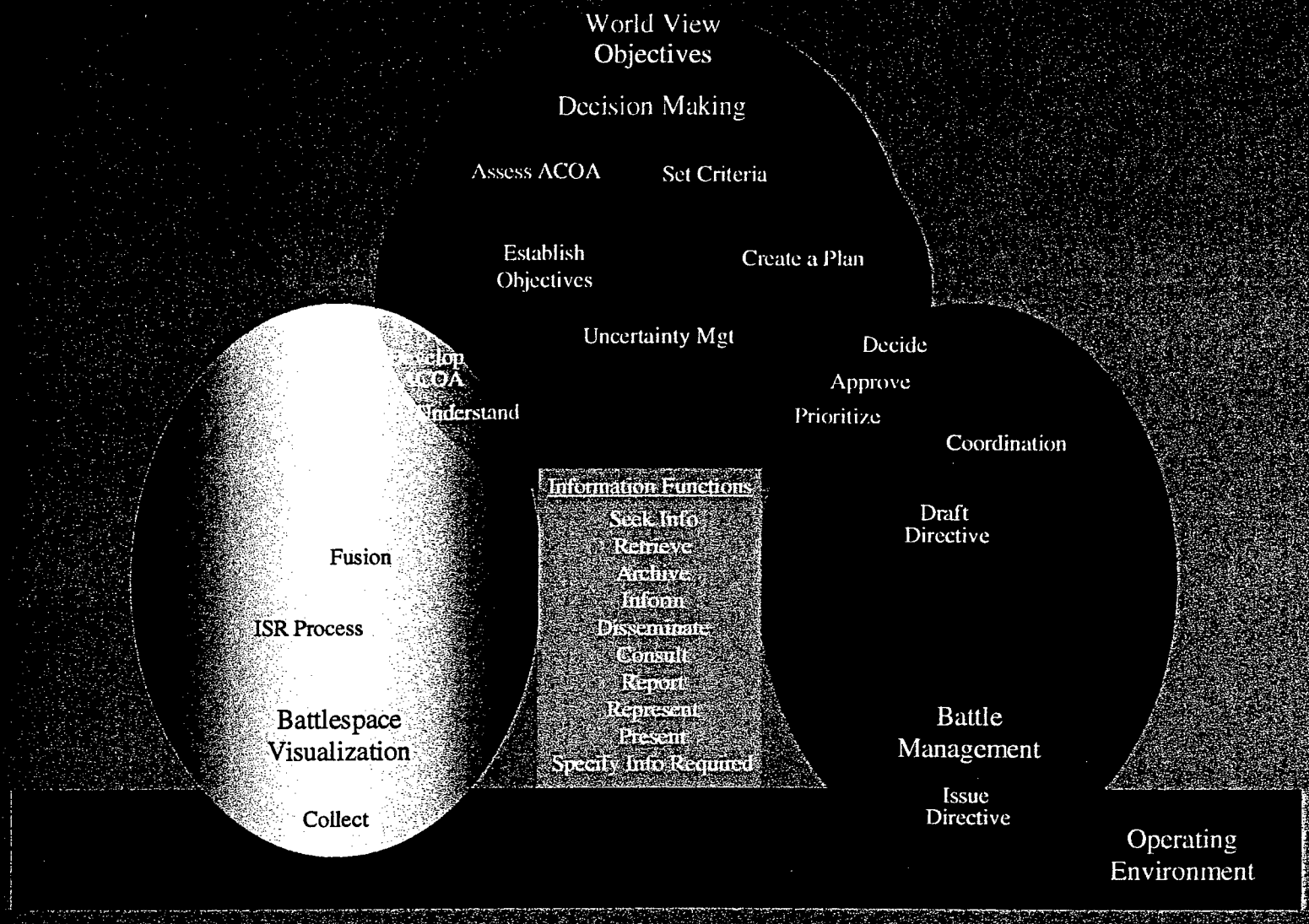
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Basic Command and Control Cycle



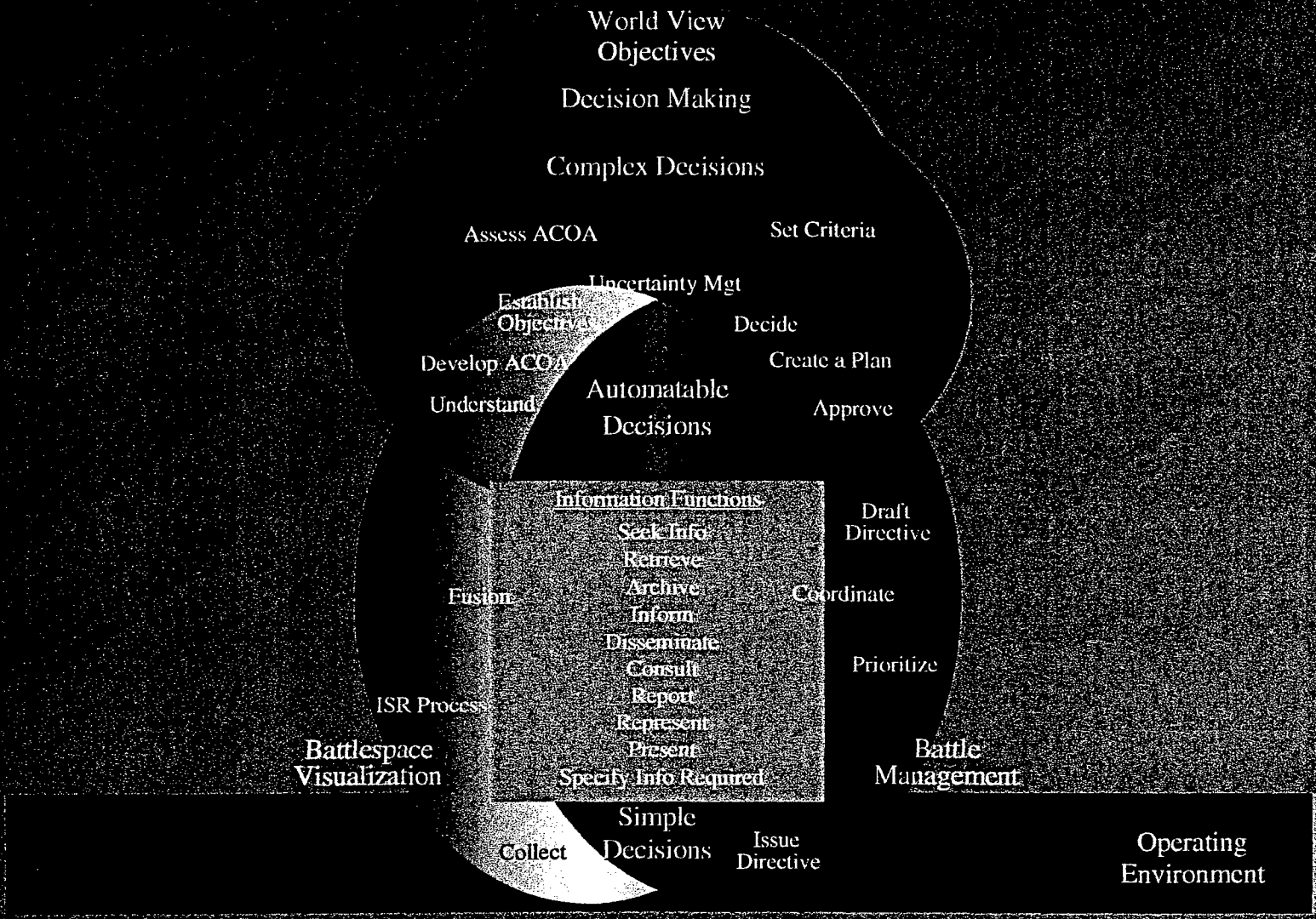
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Generic Functional C2 Processes



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What's Different?

- Better Battlespace Visualization
- Information Enabled Organizations
- Adaptive Decision Making
- Agile Battle Management
- Significant Increase in Force Effectiveness and Efficiency

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Better Battlespace Visualization

- More complete, current and consistent
- More comprehensible
- Flexible retrieval and presentation (pan, zoom, associate)
- Future explicitly considered
- More explicit management of uncertainty

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Information Enabled Organizations

- Virtual teams
- More integrated across function, level of command, and time
- More agile organizations
- More distributed information and processes
- Improved organizational learning

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Adaptive Decision Making

- Context driven decision processes
- Imbedded, predictive decision support
- Rapid plan/re-plan capability
- Contingency rich COA analyses and plans

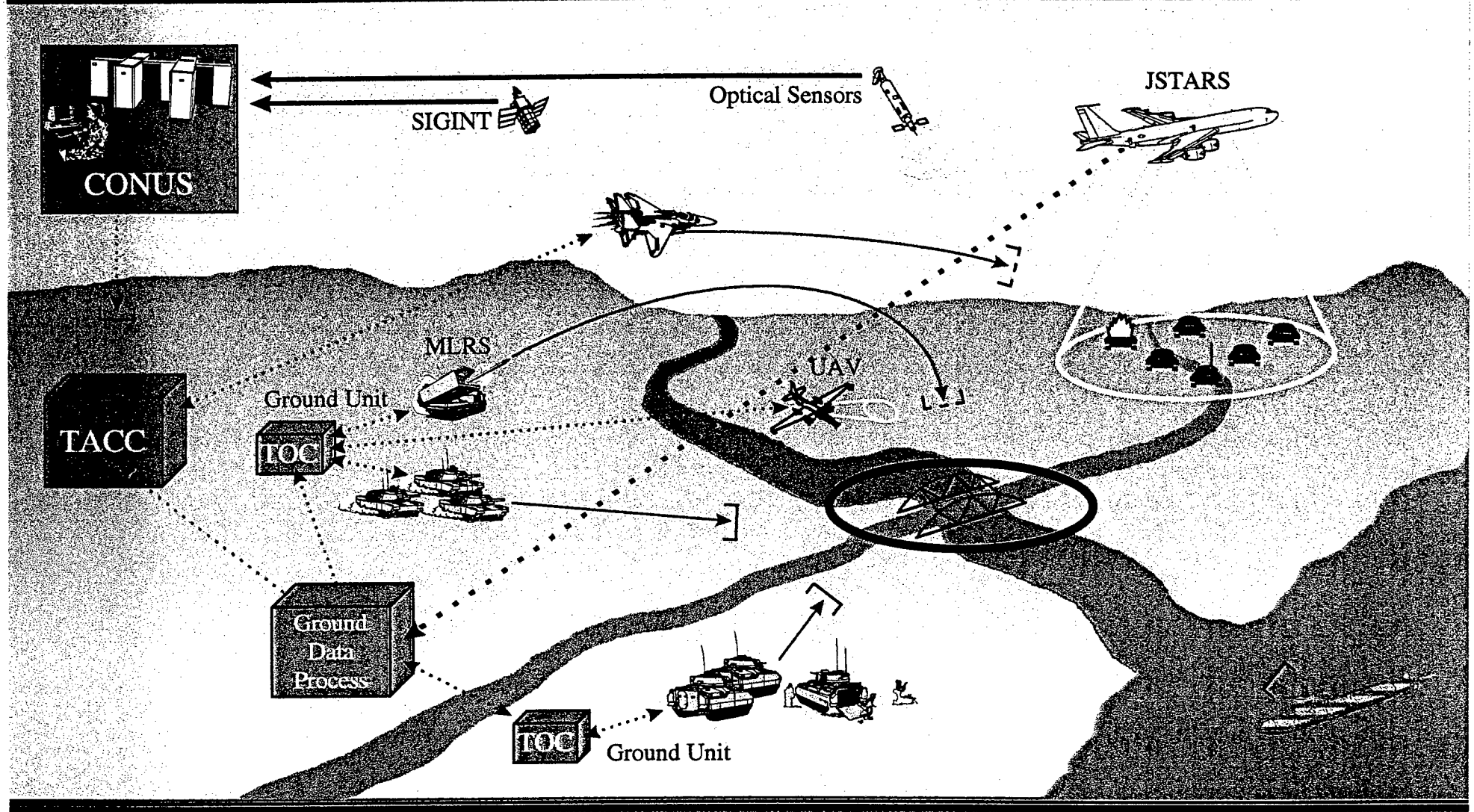
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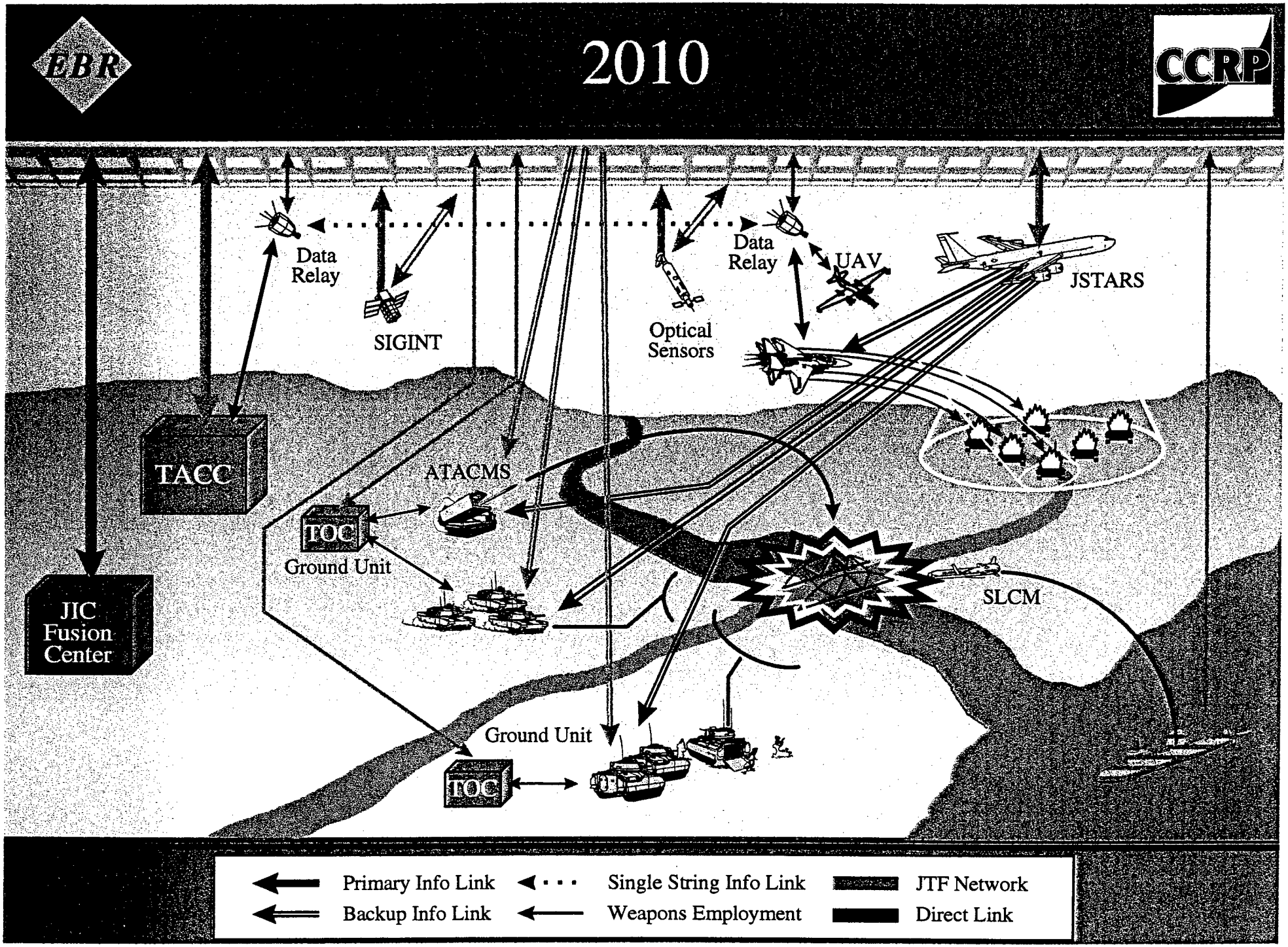
Increases in Effectiveness and Efficiency

- Seize and maintain the initiative
  - Shape the battlespace
  - Phase the campaign
  - Control the pace of the battle
- Kill the right targets
  - Less lethal battle space and less collateral damage
  - Shorter duration
  - Increased adversary "Shock and Awe"
- Concentration of fires replaces concentration of mass
- More efficient use of communications and logistics systems
- Traditional battle outcome measures (e.g. kill to loss ratios, territory conquered, mission accomplishment)

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1991


CONUS
SIGINT
Optical Sensors
JSTARS
MLRS
UAV
Ground Unit
TACC
TOC
Ground Data Process
TOC
Ground Unit
Primary Info Link
JSTARS Data
Single String Info Link
Weapons Employment
Possibly Available
Too Late for Tactical


EBR
2010
CCRP
Data Relay
SIGINT
Data Relay
UAV
JSTARS
Optical Sensors
TACC
ATACMS
TOC
Ground Unit
JIC Fusion Center
SLCM
Ground Unit
TOC
Primary Info Link
Backup Info Link
Single String Info Link
Weapons Employment
JTF Network
Direct Link

TIME MODULATION[SM]

The Revolution in Wireless Communications
Ultra-Wideband Radio And Radar Technology

presented by

Ralph G. Petroff, CEO

Time Domain

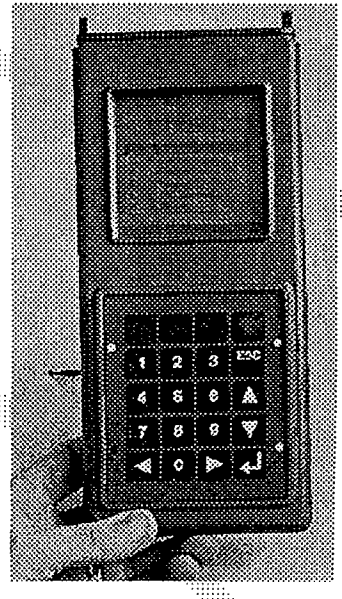
TIME DOMAIN[SM]

We are

Time Modulated Ultra-Wideband Technology

The Radio Is

STEALTHLINK™



TIME DOMAIN[SM]

For SPECIAL OPERATIONS FORCES

StealthLink™ Is

- Extremely LPI/LPD
- Ultrawide RF Bandwidth
- High Data Rate
- Very Low Power Spectral Density
- Large Number of Channels
- Multi-Path Immunity
- Sub-cm Ranging

TIME DOMAIN[SM]

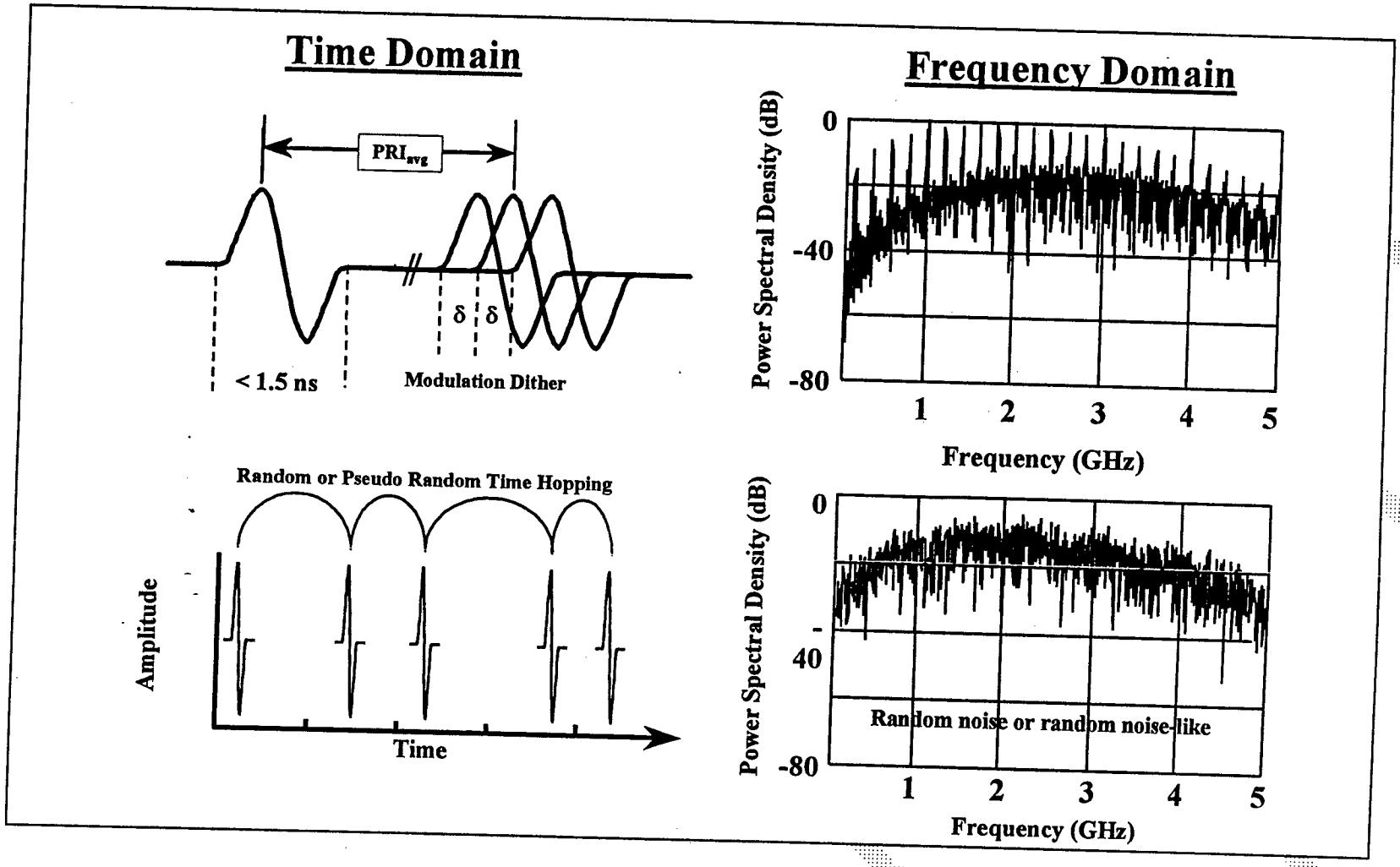
To Be Absolutely Clear -

TIME MODULATION[SM] IS NOT

- Narrowband
- Spread Spectrum (Frequency Hopping or Direct Spectrum)
- Conventional Ultra-Wideband

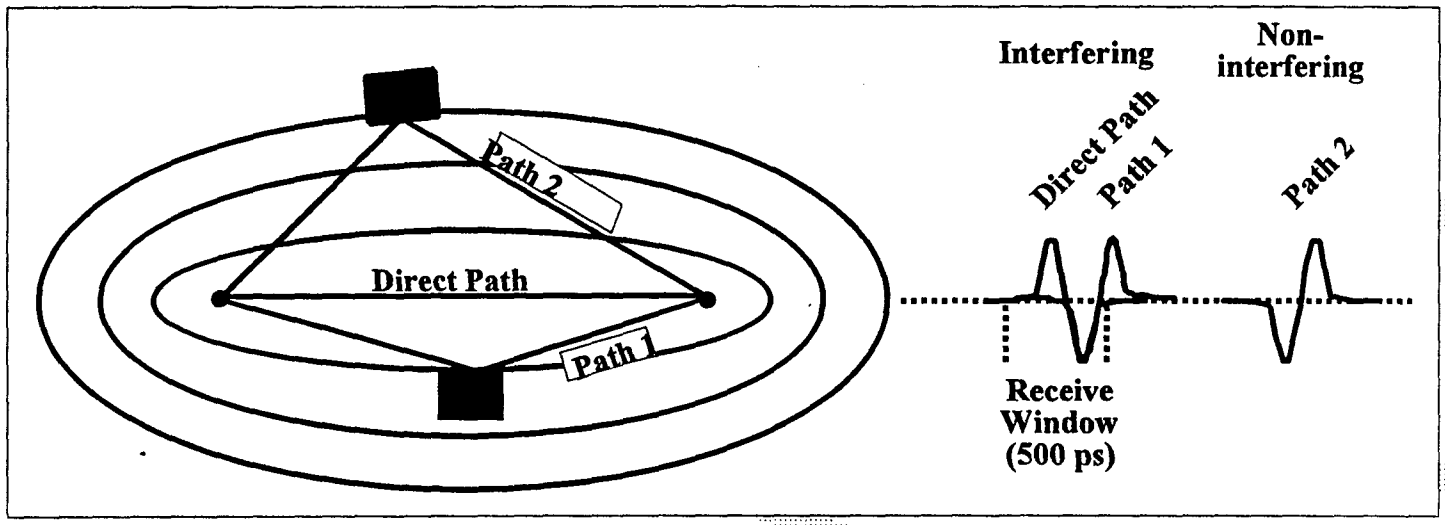
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Time Modulation Fundamentals



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StealthLink™ 's Multipath Advantage



- RAYLEIGH FADING : A Continuous Wave Phenomenon
  - Conventional Radios Overcome Fading with Power
  - High Power Transmitter are Detectable and Consumed Batteries
- StealthLink Does Not Use Continuous Waves
  - No Rayleigh fading
  - No high power transmission required to overcome Rayleigh fading

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Time Modulation Technology Development

- First Patented in 1986
- Applications in Aerial & Ground Penetrating Radar
- Applications in Photonics & Pulsed Power
- Prototype Short Range Gated Proximity Sensor
- Prototype StealthBug
- Prototype Security Field
- Prototype Sparse Array Antennas for Radio & Radar
- Application Specific Integrated Circuits (ASICs) - 3 in Process

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StealthLink™ : Ultra-Wideband Technology Electronic Device

- U.S. Marine Corps Amphibious Warfare Technology Directorate
- U.S. Army Communications & Electronics Command
- Technology Demonstrator for Time Modulation Radio Technology
- Deliverable : 16 StealthLink™ Radios
- Status : In Delivery

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Value of Time Modulation™

Operational Capability	Superiority Through a Time Modulation Solution
Information Superiority	• Inherently LPI/D • Secure Ad Hoc Networking • Higher Information Throughputs • Greater Simultaneous Numbers of Users
Dominant Maneuver for MOUT	• Robust Urban area and In-Building Communications • LPI /LPD Communications • Under Ground Communications • Geo-Location (Independent of GPS)
Precision Engagement	• Real time situational awareness • Combat ID • Geo-Location (Independent of GPS)
Full Dimensional Protection	• Network(s) of Self-Organizing Security Sensors Through a Software Implemented Enhancement Telemedicine Functions
Logistics Management	• LPD RF Tagging of Material

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USCENTCOM
Information Superiority
Strategy
For the New Millennium

December 1997

The quest for information superiority is a time honored military objective. Today our ability to routinely achieve this capability is within reach. In fact, the attainment of information superiority is absolutely key to the new operational concepts of dominant maneuver, precision engagement, focused logistics, and full-dimensional protection so clearly articulated in Joint Vision 2010. But, how do we begin?

We will start with this information superiority strategy. It will guide our efforts into the new millennium. We will apply it to our planning, exercises, and operations. This strategy will ensure we all work in concert to harness the full operational potential our Nation's advanced technology allows.

When first undertaken, such a quest can be daunting. This strategy will provide the guidance each of you needs to consistently bring your rich background of military experience into play. Properly embraced, this information superiority strategy is so designed that it will take us rapidly from the initial learning stage to an advanced capability.

I challenge each of you to internalize this strategy and to apply it appropriately to your individual areas of responsibility. Our success as a command hinges on our collective ability to master the consistent achievement of information superiority and to apply it successfully to the operational missions we face.

A. C. Zinni
General, USMC
Commander in Chief

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"A journey of a thousand miles begins with a single step." Ancient Chinese Proverb

USCENTCOM Information Superiority Strategy for the New Millennium

Synopsis:

The USCENTCOM information superiority strategy for the new millennium is designed to apply command-wide and is both current and long range. Information superiority is the enabler for the new operational concepts of dominant maneuver, precision engagement, focused logistics, and full-dimensional protection. To harness its fullest potential we must use the foundation and framework provided by this information superiority strategy to guide our individual and collective efforts over the long term.

There is a threat. It is real and growing. Today, hackers, disgruntled employees, and incompetence are a very real weakness. In the all-to-near future, the threat will expand to include terrorist groups, political dissidents, organized crime, and foreign espionage. To counter the threat, our achievement of information superiority must be grounded in a solid defensive posture and be an integrated command-wide effort. There is no one shot solution - - no silver bullet or magic BB.

The desire to achieve information superiority is as old as military conflict itself. What has changed is the medium and speed by which we do business. Like any new capability it has both strengths and weaknesses. Solutions for making information superiority work in our favor need to be based on sound military operational experience and the full appreciation of the opportunity costs of failing to act or acting in a half-hearted manner.

Offensive and defensive information operations are inter-related. One cannot be fully considered without the other. It helps to remember we are defending against someone else's offensive information operations.

To guide our actions, a vision, mission statement, and supporting goals have been developed. These are given further definition to guide our implementation by the doctrinal principles, planning considerations, and architectural tenets of the information superiority strategy.

Several operational terms - - critical intelligence, essential elements of information, and a basic load of information - - are addressed in this document. These terms are both familiar and also part of the educational effort needed to get us all actively thinking about our defensive posture. Finally, so we may provide coordinated emphasis through all means of influence available, the tools available to the Command are also discussed.

"We owe the men and women who may be in harm's way every edge technology can provide. Technology will never be a substitute for courage and human toughness in conflict, but it can increase the likelihood that the tough and courageous will be successful." Admiral William A. Owens, Vice Chairman, Joint Chiefs of Staff

Setting the Stage:

Arguably, the United States is the largest user of information technology in the world today. Our ability to bring technology to bear in conducting daily commercial and public business is a great strength. Indeed, our ever-increasing national capability has given rise to the concept of information superiority as the focusing lens of military power.

As we all know, the concept of information superiority is not new. In fact, a basic ambush is made possible by capitalizing on the simple use of information superiority. In the successful ambush, you know where the enemy is and he does not know where you are. This allows you to bring the principles of war to bear in your overwhelming favor. As they say in the infantry, no one walks away from a successful ambush.

What is new today is the concept of being able to routinely rely on the advantages flowing from information superiority. That means being able to routinely control what the enemy knows and being able to count on taking decided military advantage of our own superior information. In its most rudimentary forms, we have even been able to demonstrate that we can attain increased routine information superiority and can bring it to bear in military operations.

However, the coincident aspect of deriving great strength from the use of information technology is that it is also potentially our greatest weakness. It may even be our Achilles' heel. Some people go so far as to relate our over reliance on information superiority as a pending crisis.

As a military and as a command, our best outlook toward the concept of achieving routine information superiority may lie in the written Chinese word for crisis. The word consists of two characters. One character represents danger and the other represents opportunity.

The understanding of our seeking to use information technology to achieve routine superiority as a two edged sword will go a long way towards helping us keep an appropriate balance in our actions. Indeed there is danger, but failing to use technology to our advantage is not the answer. In fact, surrendering the initiative represents the greatest danger of all.

Seizing opportunity is something we in the military know how to do. Yet, even the most courageous may hesitate in the face of a threat that is so elusive as information dominance. Knowing the power of what can potentially happen on the offensive side - - and some of us may even have witnessed convincing demonstrations or been the victim of sophisticated hacker tools - - may only heighten our concern for the defensive side. Just because nothing has happened, how do we know for sure that our weapon systems and information are safe?

As a nation and as a military, we are even having trouble coming to grips with something as seemingly straight forward as the pending year 2000 problem. If we cannot rely on the computer to know that the year 1999 is followed by the new millennium, how will we be able to protect our information against the myriad of viruses, hackers, trap doors, Trojan Horses, and all sorts of other ethereal phenomenon? For many, this seems to be a true conundrum.

In the face of this seemingly overwhelming obstacle, it is useful to step back and look at the challenge from a base we are all comfortable with. Our experience and understanding of what we need to do will serve us well when provided with a few guidelines to point the way. Indeed, some of these guidelines are very basic.

The Iraqi bayonet and a piece of polished marble brought back as souvenirs from Operation PROVIDE COMFORT, the humanitarian effort to save the Kurds in southeastern Turkey and northern Iraq, serve to highlight the basic nature of the fundamentals of achieving successful information superiority. The liberated bayonet from Zakhu serves to remind us that in the midst of all the technology - - the fancy hardware and geewiz software - - we must remember the very basics of our profession.

Similarly, the polished marble from the airport that was being built in Sirsenk, Iraq - - to provide easy access to the summer palaces - - serves as a reminder that there are indeed very real opportunity costs in the world today. It seems quite fitting that both the bayonet and the marble were liberated from Saddam Hussein, an individual who neither understood the basics of our profession, or the opportunity costs of military adventurism.

"Four things come not back: the spoken word; the sped arrow; time past; the neglected opportunity." Omar Ibn

The Strategy:

In addressing the issue, the USCENTCOM information superiority strategy for the new millennium must be thought of as command-wide. It must be an integrated command-wide strategy that remembers the basics of our military profession as well as the opportunity costs associated with this aspect of warfare.

The strategy is also both current and long range. While the new millennium seems to still be a couple years in the future, we must remember that for several years now considerations for the year 2000 have been included in our budgeting process. In fact, this year the base line for the budget is the starting year for the new millennium. In the long-range view, this is not a passing fad. Information operations will be with us well into the next century. Indeed, well into the foreseeable future.

This paper has drawn heavily on current works, such as the November 1996 report by the Defense Science Board Task Force on Information Warfare - - Defense (IW-D). While the report itself is a year old, the Chairman's opening letter makes a most pointed reminder in stating, "this is the third consecutive year a DSB Summer Study or Task Force has made similar recommendations . . ."

The USSOCOM C4I Strategy has also been used as a source. Many of the information operations considerations being looked at today - - and by many of us for the first time - - have long been fundamental considerations for the successful conduct of unconventional warfare and special reconnaissance operations. The lessons learned since World War II by the Office of Strategic Services (OSS) and by today's Special Forces - - such as the need to encrypt traffic, the need for compartmentalization, and "the need to know" - - are basic to successful information operations and are readily available for those who choose to learn from previous experience. Yet, for those who ignore these fundamental considerations there is also a very real and potentially very large opportunity cost.

The USCENTCOM information superiority strategy provides both a doctrinal foundation and an architectural framework for accomplishing effective integrated command-wide information operations. There are a lot of neat capabilities and interesting toys available on the market today. A doctrinal foundation and architectural framework help us all by providing a common perspective. It also keeps us from becoming stockholders in the proverbial toy store of solutions looking for a problem.

- **Information Superiority:** "The capability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same." Joint Vision 2010 and Joint Pub 3-13.

Information superiority by definition must be an integrated and command-wide effort. In trying to fully understand the concepts associated with information superiority, it helps to think of information in terms of data flow. Your voice, imagery, e-mail, facsimile, video teleconference or VTC, and so on, are all data. Some of today's systems and the

new technology that will be commonplace by the year 2000 will treat all communications as standard cells of data. Used correctly, this trend will enhance our ability to attain and maintain information superiority.

The ability to control the flow of information - - to focus the proverbial lens of information superiority - - is the enabler for the new operational concepts of dominant maneuver, precision engagement, focused logistics, and full-dimensional protection. Achieving the desired sharpness of focus requires a continued command-wide effort across the full spectrum of conflict. That means that information superiority is neither a war time effort, nor a peacetime effort. Successful information operations are a full time effort.

The USCENTCOM information superiority strategy also draws heavily on Joint Vision 2010 and USCENTCOM's Strategic Plan. It provides a common command-wide basis for achieving effective and coordinated efforts both today and in the future.

In searching for solutions to this seemingly illusive concept called information superiority, we must remember our military experience is a valuable guide for working through the challenge - - there is no single solution. True effectiveness is achieved and maintained by continual effort over the long term. To that end, our efforts must focus on achieving a continuously improving operational capability.

"Make it a point to keep on the lookout for novel and interesting ideas that others have used successfully. Your idea has to be original only in its adaptation to the problem you are currently working on." Thomas Edison

The Vision:

- **Lead the evolution of information superiority into the new millennium, serving as the guardian of excellence and the engine of change.**

To properly look at information superiority on a command-wide basis, we first start with a vision to provide essential guidance over the long term. The three key aspects of this vision are:

- It is an evolutionary process.
- It must be done to a standard.
- It does require change.

The fast pace of technology says, in practical terms, that we must set ourselves up to evolve forward in knowledge and capability. This is not a one-time shot. It is a continuing challenge that calls for leadership well founded in the basics of our profession and ever mindful of the opportunity costs involved.

One of the essential basics is to be able to perform tasks, under stated conditions, and to a standard. As the guardians of excellence, we must ensure a level of offensive and defensive capability consistent with our needs as a command. For many of these tasks, there is no right or wrong answer, nor is there necessarily an answer that will be consistently correct from operation to operation. Rapidly developing technology and techniques - - both offensive and defensive - - require a periodic re-evaluation of the strengths and weaknesses of systems and networks followed by a conscious operationally based decision concerning their employment and use.

Change makes many people uncomfortable. Yet, to lead this evolution we must condition ourselves to continual change. Indeed, we must condition ourselves to be the creator of change. In the midst of this seemingly sea of change, there is one constant. The conditions under which we must perform the task to a given standard will always be, "during daily garrison and deployed operations" (see Appendix B). Successful information operations are a full time effort and require our full time attention.

"Successful companies of the 21st century will be those who do the best job of capturing, storing, and leveraging what their employees know."
Lewis E. Platt, Chairman, President and CEO, Hewlett-Packard

The Mission:

- **Be a catalyst to promote and implement the vision which ensures the command's capability to achieve information superiority continuously improves.**

- **Provide and sustain an information superiority capability for USCENTCOM forces to allow them to successfully operate in peace, operations other than war, and war.**

From our high school chemistry, we remember that a catalyst precipitates a reaction, but is not consumed by the process. This effort to achieve and maintain information superiority must not become an all-consuming raging fire. Rather, it must become an integral part of everything we do. We must routinely seek to improve our capability.

The reason for the never-ending push to continually improve is evident when we say, in the second part of the mission statement, that we must not only provide the capability, but also sustain it. This is a very real challenge given the explosive rate of change in technology.

The Goals:

- **Serve as the information superiority entrepreneur for USCENTCOM - - and beyond.**

- **Improve information superiority support to customers with systems based on our doctrine and architectural tenets.**

The information superiority goals present another new area that many people are not comfortable with - - success requires an entrepreneurial spirit. We must be the creators of initiatives that will apply command-wide and also outside the command. Achieving information superiority requires us to work both within the command and also beyond the command. The action - - or inaction - - of other commands has a direct bearing on USCENTCOM's information superiority capability.

Time and distance do not necessarily provide protection. We need only remember that during a recent military exercise, access to one Unified Command was achieved through a terminal in another Unified Command that was many time zones and thousands of miles away. Information superiority requires constant vigilance.

"We are confronted with insurmountable opportunities." Walt Kelly, "Pogo"

Information Superiority Principles:

- **Global**
- **Secure**
- **Mission Tailored**
- **Value Added**
- **Joint**

There are certain fundamentals in the profession of arms that everyone must know and understand. The principles of war - - objective, offensive, mass, unity of command, maneuver, economy of force, security, surprise, and simplicity - - together form such a fundamental. As we are taught in our schools, as we experience during exercises, and as we learn in our collective operational experience, the principles of war are just as valid today as they were in the past. Preserving the principles of war is fundamental to successful military operations.

Likewise, the information superiority principles are fundamental to success in the information age. These principles compliment and enhance our ability to achieve the principles of war on the battlefield. As part of our on-going effort to stay current in the profession of arms, the information superiority principles must now be added to our kit bag of tools.

- **Global:**

  The principle of global applies directly to the U.S. Central Command. We do not live in our area of responsibility (AOR). Therefore, for even the most routine operations, we are extremely reliant on a great deal of information flow between the CONUS and our AOR, some 7,000 miles away.

  Our requirements also draw on worldwide support from national level resources. Supporting CINCs, the Services, and agencies provide intelligence, logistics, telemedicine assistance, personnel replacements, public affairs information, and so on, that this command must have to function.

  Indeed, the success of our operations depends on global interaction. Quite literally, we are all in this together.

- **Secure:**

  By secure, we mean National Security Agency (NSA) provided codes and ciphers. NSA provided security is the best protection we can provide to our people and to our operations. It is not always easy to protect our data flow, but it is something we must continually strive to do.

  Additionally, maximum use must be made of classified systems, such as, secure voice and the Global Command and Control System (GCCS). These systems protect the data flow from end-to-end and ensure the integrity of our transmissions.

While there may also be systems we rely upon that are not encrypted, we need to proactively work to get them protected. In the interim, we need to follow the basics that have applied to radio transmissions for years. All traffic, classified and unclassified, must be - - as a minimum - - bulk encrypted for transmission.

- **Mission Tailored:**

Successful information superiority is achieved by tailoring to the mission and task organizing to support the customer and the operation. This means we must look at how our component units are organized and equipped. Organizations and equipment designed for World War III in Europe are not necessarily optimized for war in the information age.

- **Value Added:**

Many advantages are achieved by leveraging rapidly advancing technology. However, we must always ask ourselves up front, "What are the risks and disadvantages of this capability?" Our challenge is to ensure the technology we choose is value added to our forces.

Certainly everyone would agree, by the use of our technology we must never compromise a unit, a team, or an individual operator. And yet, we have.

Two examples serve to illustrate the point. During Operation Desert Storm, we lost pilots to the Iraqis due to a weakness in our information operations posture. The pilots were equipped with a PRC-90 survival radio that broadcast on two separate international distress frequencies. After the pilots were shot down, as instructed, they turned the radios on and it became a time-distance contest favoring the enemy.

We also lost special operations forces trying to rescue the downed pilots. This was not value added to either the special operations forces or to the pilots. It would have been better if the pilots had not turned the radios on than to fire the proverbial red star cluster that told the Iraqis exactly where they were.

The second example occurred during Operation Desert Shield when the Iraqis attacked Khafji. As the out numbered U.S. forces pulled back rapidly, a rucksack was left behind containing everything the individual owned, to include a radio and three months of the cryptographic key. The matter was made worse by the fact that the three months worth of key lost was also part of the Inter-Theater COMSEC Program (ICP). It was the key being used by the entire theater of operation. Again, by not acting well in advance of the event to plan for alternative keying material after units arrived in theater, we allowed our forces to be put in an unfavorable position.

- **Joint:**

  As the previous discussion and examples illustrate, the Air Force or Navy pilots may be rescued by another Service or all forces may be affected by a cryptographic compromise. Information superiority operations are inherently joint.

Planning Considerations:

- **Information superiority largely depends upon National systems.**
- **Information superiority must be provided down to the lowest possible tactical level.**
- **Communications systems do not follow the chain-of-command.**

We have a vested interest in National systems for intelligence, logistics, communications, command and control, and information superiority. Our planning must recognize the strengths and weaknesses of our reliance on these systems.

While the specific information needs may differ, the principles of war and the principles of information superiority apply to all levels of operation. Even the foot soldier is dependent on the Global Positioning System (GPS) for navigation.

Today's - - and tomorrow's - - distributed network information systems are a fact of life and are also different than many of us are used to. We must educate ourselves to make wise use of their increased potential while simultaneously minimizing their weaknesses.

"We know what we are, but know not what we may be." William Shakespeare

Architectural Tenets:

- **Seamless**
- **Robust**
- **Automated**
- **Full Spectrum**
- **Standards Compliant**

The architectural tenets compliment the information superiority principles and position us to make wise use of the increased potential of our networked systems.

- **Seamless:**

  The tenet of seamless says we must allow information to flow freely through networks as operationally required. This seamless flow of data addresses the element of time. Much of the data flow is of direct use to forces without the intervention of intermediate headquarters. The need for information flow is not the same as the chain-of-command. Rather, it is a function of carrying out the desires of the chain-of-command so information superiority is gained and maintained.

- **Robust**

  By robust, we mean to provide multiple means of communication to support our operations. As reliant as we are on the free flow of data, we must make sure our forces - - and we - - are never single point sensitive. We must ensure we can never be isolated by a single failure.

  An integral part of seeking the affordable robustness we need is to harness the power of switched systems to provide many alternative routes for communications to flow. Properly engineered, modern switched networks do automatic alternate routing around points of congestion and failure. In many ways, they are self-healing.

  One of our greatest challenges is to provide a communications architecture that is flexible and adaptable to the changing needs of the command. While we cannot get there overnight, we must ensure a command-wide emphasis is maintained towards rapidly achieving this tenet. This command-wide attention will, by necessity, mean using the tools discussed later to influence other commands and agencies to change the way they currently do business. In large measure, our ability to ensure information superiority depends on it.

- **Automated:**

  This tenet builds on the two before it. Many of the necessary functions in information operations are most effective or only effective when they are automated. The tenet of automated says we need to harness automation for what it can do best and to free the operators to do what they can do best.

- **Full Spectrum:**

  The frequency spectrum is a precious resource that must be carefully allocated and proactively managed. It is through the use of the frequency spectrum that the communication systems carrying the required data flow are made to work. When the frequency allocation fills up, we become physically limited in how much data flow we can handle. However, if we can use other portions of the frequency spectrum then we can often simply switch to an available portion and continue to do business. Our emphasis needs to be to increasingly attempt to utilize the full frequency spectrum.

- **Standards Compliant:**

  Our operational support is enhanced by being standards compliant. While under the banner of interoperability we have long sought standards compatibility among the Services, the information age and the need for information superiority require different priorities. In fact, at first blush the priorities appear to be just the reverse from what we would expect.

  To harness the power of the distributed networks and switched systems and to take full advantage of the vast worldwide global network of commercial systems we seek compliance in the following order. We seek first to use international commercial standards, then U.S. commercial standards, and then finally, if and only if there is an overriding operational reason or no other standards exist, to use military standards.

Like the principles of war they compliment and enhance, the doctrinal principles and architectural tenets described are easily understood on the surface, but have tremendous ramifications on the actions we take. A story from a management class, that is reported to be from a major aircraft manufacturer, may help put these new principles and tenets in perspective.

According to the story, whenever an engineer had a hot idea for the President, such as the concept for a new aircraft, it was frequently quite complex. The President's solution was to offer a business card to the engineer and to ask the engineer to put the essence of his idea on the back of the card. Inevitably, the response would be that his ideas for the new aircraft were far too complex to fit on the back of a business card. The President's reply to the engineer would be, "Then the idea is not ready for me yet."

In all likelihood, more than one person reading this paper will say to themselves that the engineer was correct. The ideas behind an aircraft as complex as a modern airliner simply would not fit on the back of a business card. Yet, when properly thought through, the essence of such complexity can indeed fit neatly in a small space. For example, the ideas and the thought process behind the equation E=mc2 are very complex,

but fit neatly on a business card. Likewise, the thought process behind the doctrinal principles and architectural tenets of information superiority is complex. Yet, these principles and tenets also fit neatly on the back of a business card.

"A new idea is first condemned as ridiculous, and then dismissed as trivial, until finally it becomes what everybody knows." William James

Defensive Information Operations (DIO):

To properly address information superiority, we must understand that the offensive and defensive operations are interrelated. One cannot be fully considered without the other.

In developing this paper, the threat assessment was taken from the Defense Science Board Task Force on IW-D, dated November 1996. It says quite clearly that the threat is out there. The threat is here today and will continue to grow into the new millennium. By the year 2005, we expect widespread use by organized crime, terrorist group actions, and foreign espionage. While the rest of this paper will concentrate on defensive information operations (DIO), the key is that we are defending against someone else's offensive information operations.

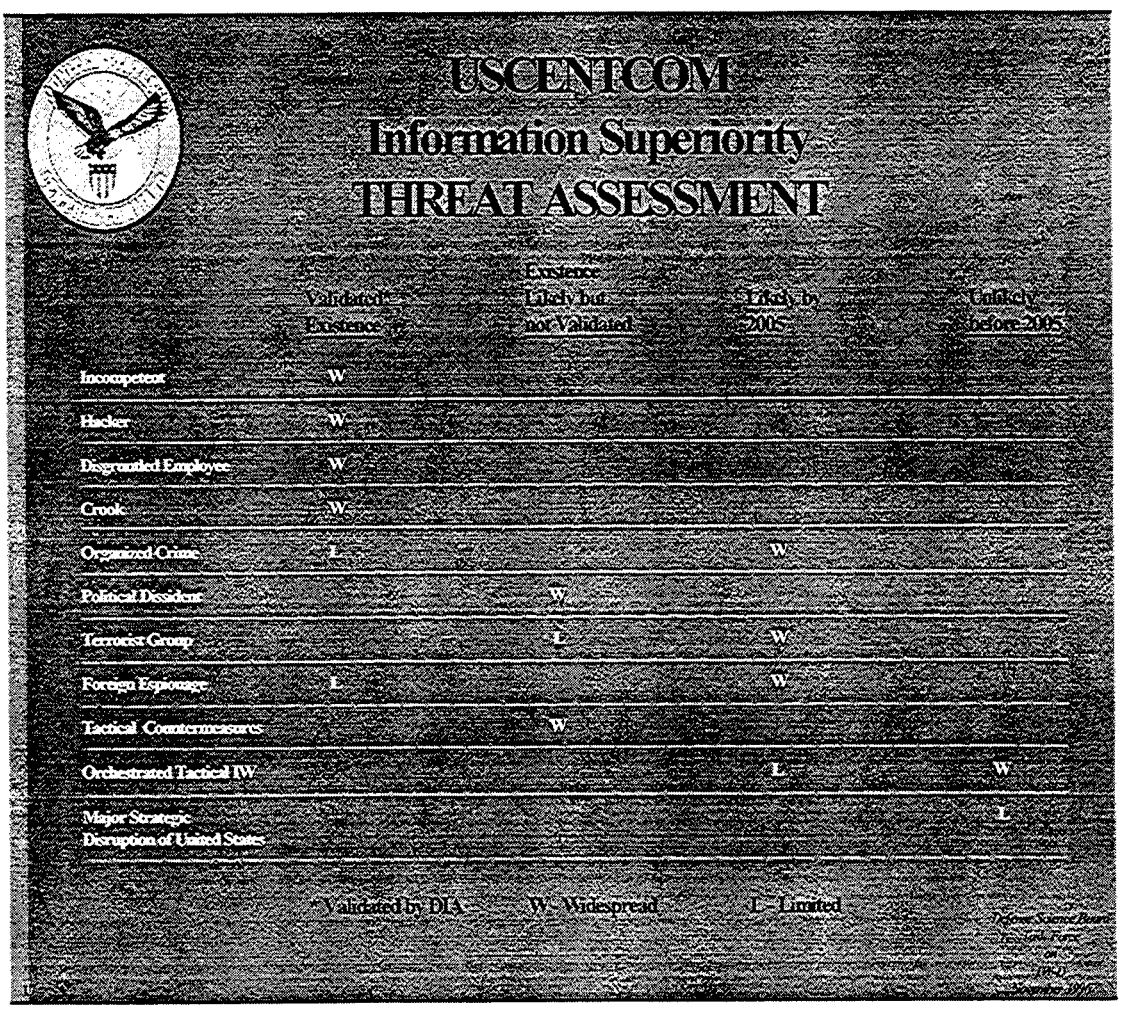


Figure 1: Threat Assessment

The first rule of defense is to know yourself - - your strengths and your weaknesses. The rapid advances in technology, the increasingly inter-related nature of global communications, business, and information systems, as well as, the leading role the United States plays in world affairs, all add up to the fact that the quest for successful defensive information operations has no finish line. DIO must be an integral part of everything we do.

If there is a bottom line to defensive information operations, it is continuing education and training. While a single lapse in our defensive posture can make us vulnerable to an attack, keeping all the holes plugged from a defensive point of view requires constant effort and monetary investment. There are no easy solutions. Effectiveness is achieved and maintained by continual effort over the long term. As stated earlier, our efforts must focus on achieving a continuously improving operational capability.

"Nothing is worse than active ignorance." Johann Wolfgang Von Goethe

Defensive Information Operations: An Instrument of Combat Power.

The pervasiveness of the considerations needed to achieve and maintain information superiority says we need to view it in a similar way to the other instruments of combat power.

- **Critical Intelligence:** "Intelligence which is critical and requires the immediate attention of the commander. It is required to enable the commander to make decisions that will provide a timely and appropriate response to actions by the potential/actual enemy . . ." Joint Pub 1-02.

- **Essential Elements of Information (EEI):** "The critical items of information regarding the enemy and the environment needed by the commander by a particular time to relate with other available information and intelligence in order to assist in reaching a logical decision." Joint Pub 1-02.

On a daily basis, in CONUS, in our AOR, and for a specific country or operation, there are certain elements of information important enough to wake the commander up, even if he has just gone to sleep after a prolonged period without rest. These elements would indeed be critical intelligence. Other information is essential to decision making and needs to be kept current and visible to the commander and staff alike. These elements are essential elements of information. From the point of view of information superiority, an example of both critical intelligence and essential elements of information might be presented as follows:

Critical Intelligence:
- Basic load of information: specific country or operation.

Essential Elements of Information:
- Basic load of information: CONUS, AOR.
- National systems' status: generic capabilities; e.g., secure voice (Red Phone, STU III, Grey Phone, STO Phone).
- Command systems' status: CONUS, AOR, specific country or operation.

Based on the doctrinal principles and architectural tenets of information superiority, we need to watch the National systems' status and the command systems' status. These views keep the commander informed on the relative ability of the various communications systems (including intelligence systems) to allow data flow. It also helps to prioritize restoration efforts.

The basic load of information - - shown above as an example - - is split between the essential level for CONUS and our AOR and the critical level for a specific country or operation. The concept of a basic load of information is new and requires amplification.

Rules for a Basic Load of Information:

- **Have a minimum of 72 hours of data information required to do your job.**
- **Have, as a minimum, enough historical data to do your job for 90 days.**
- **Carry with you all the non-changing data required to do your job.**

Just as a weapons system - - an individual soldier, tank, aircraft, or ship - - would have a basic load of ammunition and supplies, they must also have an appropriate basic load of information. For the individual Marine or infantryman, the basic load of information may be as simple as the commander's intent, the five-paragraph field order, a map, and a compass azimuth. That basic load of information may also provide enough knowledge for mission accomplishment for 12, 24, 48, or even 72 hours.

At higher levels, the situation gets more complex. However, we still need to continually seek the answers to, "What is my basic load of information?" and "How long will that basic load of information last?" The answers to these questions not only help us prioritize restoration efforts during the immediacy of a current operation, but also over the long term allow us to work to reduce vulnerabilities..

"I look for what needs to be done . . . that's how the universe designs itself."
R. Buckminster Fuller

The Tools to Do the Job:

As a direct result of our dependence on the global flow of data, we must use all of the means of influence at our disposal to ensure a solid defensive posture. There are a variety of tools to chose from and, in many cases, multiple tools will need to be used to attain the desired result. The following is a partial list:

- National Military Strategy
- CINC's Integrated Priority List (IPL)
- Joint Warrior Capability Assessment (JWCA)/Joint Requirements Oversight Council (JROC) Process
- Joint Military Readiness Report (JMRR)
- Budget
- CINC's Strategy
- Policies, Procedures, and SOPs for HQs, Components, and Individual Directorates
- OPORDS/OPLANS
- Joint Doctrine
- Tasking, e.g., the Defense Information Systems Agency (DISA) and the National Security Agency (NSA)
- Training
- Education
- Writing for Publication

The list purposely includes writing for publication so those we wish to influence - - both within the command and beyond - - are given the benefit of the logic behind what we are doing and can also become educated in defensive information operations.

Through education, by the coordinated use of the many tools at our disposal, and through a unity of effort, we can achieve and maintain a continually improving operational capability in defensive information operations.

"Minds are like parachutes, they only function when they are open."

Sir James Dewar

Summary:

Achieving and maintaining information superiority is similar to the situation depicted in the African fable that says:

Every morning in Africa, a gazelle wakes up. It knows that it must run faster than the fastest lion or it will be killed!

Every morning in Africa, a lion wakes up. It knows that it must run faster than the slowest gazelle or it will starve to death!

It doesn't matter whether you are a lion or a gazelle - - when the sun comes up, you had better be running!

Indeed, attaining and maintaining information superiority is a race. It is a race we are already running. It is a race we must continually lead.

Success depends on a team effort. Each of us brings experience to the operation that others need. Each of us can also learn from what others are doing. Each of us will have to pass on to our replacement what we have learned. The information superiority marathon is unique in that the entry is open to anyone, teams can compete, and there is no finish line. In other words, we are at war.

"Even if you are on the right track, if you stand still you'll get run over by the next train." Will Rogers

APPENDIX A:

The 25-Meter Target: A Practical Example.

The USCENTCOM information superiority strategy for the new millennium provides guidance for the close in fight as well as the deep battle. However, since it is often difficult to look deep, see deep, and think about the deep battle while the close in targets keep popping up in profusion, an example of a 25 meter target may help provide clarification and perspective. In the interests of time and simplicity, this example will use the staff weather expert and consider the strategic to JTF levels of data flow. Just as will need to be done in each functional area, to fully complete the picture, the analysis would be finished down to the lowest tactical level by each directorate and component.

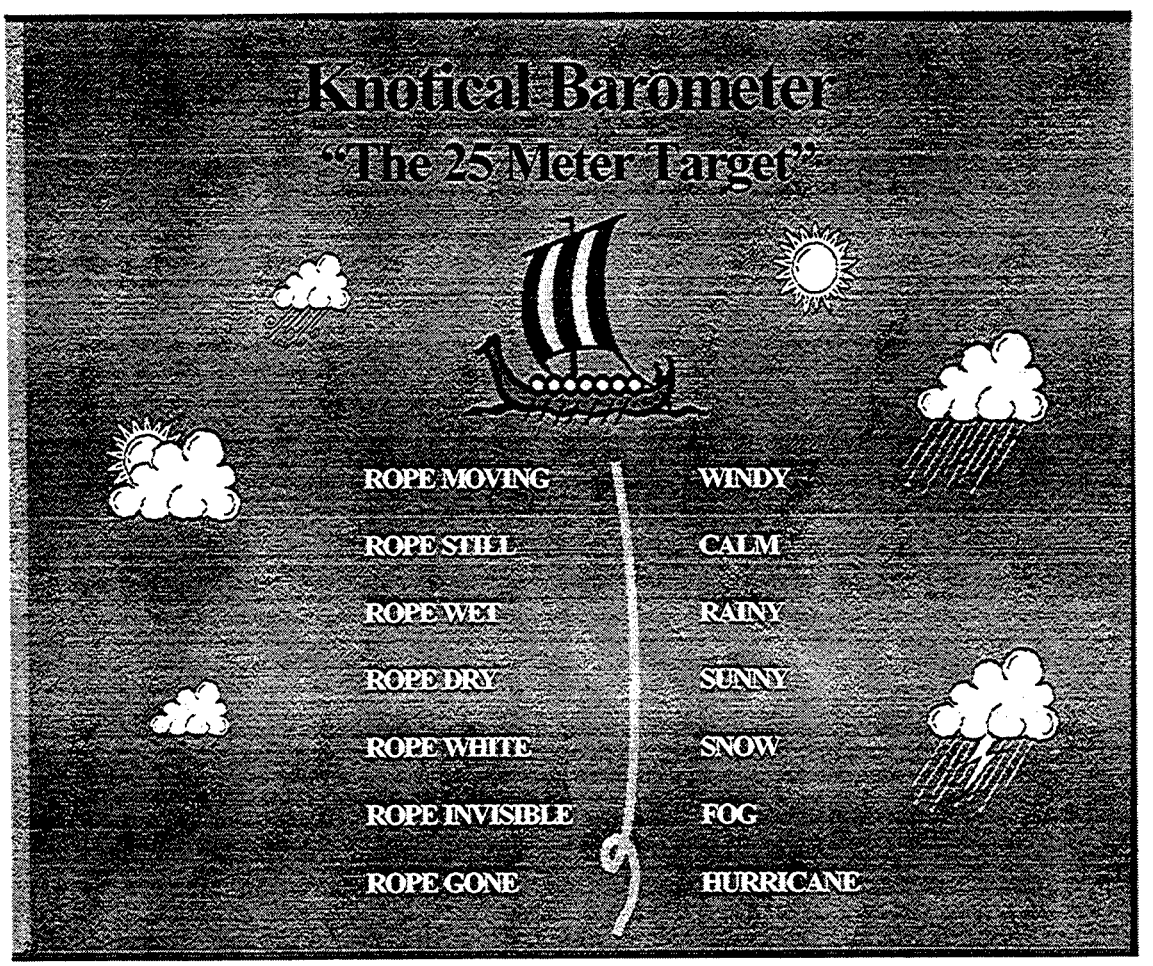


Figure 2: Everyone Predicts the Weather

The weather folks were chosen for two reasons. First, most people consider themselves to be knowledgeable of the weather and of what the weather people do. So we can easily relate to the example (see figure 2). Second, Xena - - the Air Force Weather Communications Vision - - closely follows this strategy. Xena uses the same doctrinal principles and architectural tenets outlined in the USCENTCOM information superiority strategy for the new millennium. Examining the doctrinal principles, planning considerations, and architectural tenets, as they relate to the way the actual weather support is provided today, may help the reader of this document to tie the undeniable presence of the 25-meter target with the longer-range strategy.

In simple terms, on a daily basis raw and model weather data is collected from two major CONUS sources, combined with local observations, reviewed in respect to historical data, and the appropriate forecasts prepared. Essentially, this same procedure is followed both in garrison and while deployed. Viewed in relation to the doctrinal principles, we find a majority of strengths as well as some weaknesses to work on.

Doctrinal Principles:

Global:

The Fleet Numerical Meteorological and Oceanography Center (FLENUMETOCCEN) in Monterey, California and the Air Force Global Weather Central (AFGWC) at Offutt AFB, Nebraska are the sources of raw and model simulation data used by our forces on a global basis. Local observations provided by the respective national governments are also important sources of data in preparing the daily forecasts. The Naval Oceanographic Office and the Air Force Climatology Center issue annual historical updates giving a preferred minimum of 10 years of data. Less than 10 years of historical data - - depending on the exact geographic location in the AOR - - is suspect. These sources are used in support of the full spectrum of conflict.

Analysis: big strength, slight weakness. The centralized capabilities are far more powerful than widely dispersed forecasters could produce on their own. However, the products must be distributed to be of value to the commander.

Secure:

One way to access the global sources of information is via the Secure Internet Protocol Router Network (SIPRNET). These global sources are open to anyone having access to the SECRET level network. Both the Global Command and Control System (GCCS) and "INTELink S" are National Security Agency (NSA) approved secret level networks that use the SIPRNET and allow access to both CONUS weather centers. The Non-classified Internet Protocol Router Network (NIPRNET) also provides access to the same information and is password protected, but provides no NSA encryption.

Commercial phones, with modems, also provide an unclassified dial in capability to CONUS weather facilities. Like its NIPRNET counterpart, this unclassified access is password protected. There is no STU III dial in capability.

Analysis: strengths and weaknesses. NSA secure networks provide the single best protection we can provide our forces. However, they are still vulnerable to the current threat of disgruntled employees, incompetent users, and internal hackers. Good defensive information operations would add password protection, such as exists for users who access the data through the NIPRNET. The password protection for both NIPRNET and commercial phone users also needs to incorporate the routine use of common hacker tools by the system administrators at the central depositories. This will ensure the passwords provide the best degree of protection possible.

A recent check of 1,300 users at a unified command found 300 easily broken passwords on the first check. This was the initial check run after conversion to a new operating system. After the first check, the users were notified to change their passwords following standard practices designed to guard against known hacker procedures. The second check found no passwords that could be broken.

The significant point is that, while the protection we seek is afforded by a series of protective measures, all firewalls are not equal. Nor do all passwords provide the same degree of protection. There is a difference in quality.

While passwords help protect against unauthorized users, they do not protect either the information request itself or the response. Weather requests about predicted winds aloft or about predicted sea states could easily provide a tip-off about an impending airborne or an amphibious operation. Unclassified requests for weather information in support of operations is a definite weakness.

Mission Tailored:

As military requirements develop, major CONUS centers serve as resources to forecasters worldwide. For example, in preparation for an airborne operation, the volumes of available data that are not needed - - such as tide tables and sea states - - is ignored while the required information - - such as light data and predicted winds aloft - - for the specific operational area is pulled. Similarly too, local observations and historical data can be tailored to support the desired end product.

Analysis: big strength. The common practice employed here is known as "user pull" and makes efficient use of the transmission media to support the required data flow.

Value Added:

The relatively easy access to the large volumes of warehoused raw data and the products of powerful simulation models provide accuracy and the ability to analyze variables that would otherwise not be available. Since only the data requested and the products of the

simulation models are passed, efficient use is made of the transmission media. Most importantly, the deployed commander has access to tools not otherwise available.

Analysis: big strength. The value added is obvious and the one possible weakness - - that of an intruder being able to corrupt the data - - is greatly minimized by the computer models themselves as well as the "man-in-the-loop." It just so happens that the nature of the weather forecaster's business means that they frequently are provided bad data. Inaccurate readings or readings improperly entered and transmitted must be screened out by the individuals using the information. Due to the routine use of historical data, the forecaster usually knows the normal expected range of the readings.

Joint:

Weather operations draw heavily from joint doctrine. They also capitalize on the various Service areas of expertise to provide truly joint capabilities and products.

Analysis: big strength. The weather services are making maximum use of joint common user systems. To do so, they must be standards compliant. The end result is the effective use of data transmission resources and the ability to exercise maximum flexibility in the accomplishment of their mission.

Planning Considerations:

The weather capability also follows the information superiority planning considerations quite closely. The weather forecasters make maximum and wise use of the National systems and provide parallel capabilities down to the lowest possible tactical level. Likewise, their effective use of these systems recognizes the strength of distributed networks that do not follow the chain-of-command.

Architectural Tenets:

When the weather operations are reviewed in relation to the architectural tenets, we again find a majority of strengths as well as some weaknesses to work on.

Seamless:

The tenet of seamless is fundamental to the accomplishment of Xena, the Air Force Weather Communications Vision. It is key to their global support of their customers. By the very nature of the way they do business, they have accomplished this objective.

Analysis: big strength. The only caution here is that technology is evolving rapidly and there is a constant need to modernize. This translates to ensuring there is adequate money in the budget to upgrade equipment as the common user systems and the common user software evolve independently.

The Defense Information Systems Agency (DISA) is key for staying seamless on a global basis. The USCENTCOM/J6 is the primary source for internal standards. Working together, they can ensure the seamless tenet stays a big strength for the command.

Robust:

The routine use of multiple common user systems - - such as the SIPRNET, the NIPRNET, and the Global Broadcast System (GBS) - - local observations, and historical data provide a very robust capability. This tenet drives the way the weather business is assessed. As a result, the weather forecaster is well positioned to work through adversity.

Analysis: big strength. By being able to use all means available, weather enjoys an enviable position. Barring a major and prolonged attack on our communications infrastructure, they will be able to get the information they need. Even if cut off completely; local observations, historical data, and the ability to run micro-scale models will permit the production of acceptable forecasts.

Automated:

The weather business has automated extensively and yet maintained the "man-in-the-loop" to good advantage. The use of computers and easily transportable software and historical data using CD ROM technology, together with positioning skilled personnel with the commands they support, is the smart combination called for by this tenet. They have indeed harnessed automation for what it can do best and freed the operators to do what they do best.

Analysis: big strength.

Full Spectrum:

Due to the collective actions taken by the weather operations personnel, they make maximum use of the frequency spectrum available today - - and maybe even better use of HF than many other functional areas. They are also planning to use other portions of the frequency spectrum, such as offered by the Global Broadcast System (GBS), as soon as it is routinely available worldwide.

Analysis: big strength.

Standards Compliant:

In pursuit of this tenet, the weather personnel have gone as far as they can go alone. Further progress is the domain of DISA and the J6.

Analysis: big strength, significant weakness. The big strength is that at the present, for what can be done practically by the weather service organizations, they have achieved

this tenet. The significant weakness is that until commercial standards are set and in place, this Command can not fully capitalize on the seamless robustness provided by the rapidly evolving international commercial service providers. Today, the international standards for the Asynchronous Transfer Mode (ATM) are forecast to be in place by late 1999. Yet, DOD does not yet have a policy in place requiring conversion to ATM by the year 2000. Since the budget for the fiscal year 2000 has been completed, that means we may not have money in-place to make the conversion, nor be able to truly capitalize on the robustness of international commercial networks.

A number of the Command's tools can be brought to bear on this weakness. The near term, and most readily accomplished, is the JWCA/JROC process. The readiness report (JMRR) is another effective tool. Once the needed policy is in place and the ATM conversion is programmed, the CINC's Integrated Priority List (IPL) will help keep the issue in the spotlight. Other tools - - such as writing for publication - - can also help educate people to the importance of the issue.

One caution is in order. This is a quick look at a single staff function. The weather function is likely one of the most healthy in terms of defensive information operations. In all probability, a review of the remaining staff functions will not only further support this analysis, but also provide other areas of weakness as well.

Basic Load of Information:

Finally, we turn to the basic load of information for the weather personnel both at home and in the AOR. Again, from the information superiority perspective, the weather staff is well prepared. Information superiority is neither a wartime effort, nor a peacetime effort. Successful information operations are a full-time effort and the weather staff uses essentially the same tools, sources, historical information, and common user networks in garrison and when deployed.

Rules for a Basic Load of Information:

- **Have a minimum of 72 hours of data information required to do your job.**
- **Have, as a minimum, enough historical data to do your job for 90 days.**
- **Carry with you all the non-changing data required to do your job.**

The basic load of information for the USCENTCOM JTF stand-alone weather capability allows a variety of equipment to be used effectively. This equipment includes:

- A small tactical terminal (STT) which is a satellite receiver capable of direct feed from satellites overhead. It is also Internet Protocol (IP) network capable which facilitates the seamless exchange of data.

- Three desktop or laptop computers for accessing CONUS weather facilities via SIPRNET or NIPRNET. Weather data obtained varies from raw data, to model output, to large scale "man-in-the-loop" finished product.

- A tactical forecast station (UNIX) to access the grided database via the SIPRNET and the NIPRNET.

- Navy tactical environmental support system (TESS) to access oceanographic data via the SIPRNET and the NIPRNET.

- Commercial phones, with modems, to provide an unclassified dial in capability to CONUS weather facilities. Weather data obtained is the same as through the computer, but much slower.

- The charts and maps used by weather personnel are provided as part of the product from both CONUS based sources and via the satellite. Other charts and maps are produced locally from the data on hand.

SOPs and deployment binders contain historical data and written regional climatological studies by experts.

The basic load of information is updated constantly and is good for 2 to10 days of operation without refreshment, depending on the situation - - METT-T (mission, enemy, terrain, troops, and time) plus seasonal and geographical considerations. However, a significant shortfall is that the basis of weather prediction relies on cooperation of all the world's governments. Regional stress can cause drastic change in the availability of host nation, coalition, and - - naturally - - enemy data. Over time, the quality of the data will degrade if local observations for individually perceived national security reasons are not made available.

"Know the ground, know the weather, your victory will then be total." Sun Tzu

APPENDIX B:

Note: The mission essential tasks in this appendix were originally written for USCENTCOM Exercise INTERNAL LOOK 98. However, these tasks are universal and should be routinely applied to operations and exercises. Their routine use will help provide some of the key metrics necessary to judge the progress of an organization in providing a continuously improving defensive information operations posture.

Defensive Information Operations (DIO) Mission Essential Tasks For Exercise INTERNAL LOOK 98

Exercise INTERNAL LOOK 98 provides an opportunity to take a command-wide look at defensive information operations (DIO) from a systems perspective. Most of the capabilities we rely upon were developed over the years to satisfy individual or limited network requirements. While these capabilities may satisfy operational needs, they may also make us vulnerable to offensive information operations. Following the guidelines of the Information Superiority Strategy, this review will document our strengths and our weaknesses. Once documented, we can better capitalize on our strengths and move quickly to minimize our weaknesses.

DIO mission essential tasks are keyed to the Information Superiority Strategy's doctrinal principles, planning considerations, and architectural tenets. The general category applies to everyone. Consistent with the information superiority strategy, individual components and directorates must develop the tasks, conditions, and standards of the specific category of mission essential tasks to fit their operational situation.

Note: For many of these tasks, there is no right or wrong answer, nor is there necessarily an answer that will be consistently correct from operation to operation. Rapidly developing technology and techniques - - both offensive and defensive - - require a periodic re-evaluation of the strengths and weaknesses of systems and networks followed by a conscious operationally based decision concerning their employment and use.

A. General:

1. Doctrinal Principles.

- **Global**:

Task: Apply the same DIO measures to all systems used by or supporting the Command.

Condition: During daily garrison and deployed operations.

Standard: Consistent DIO standards are applied throughout the Command to keep USCENTCOM above the point of vulnerability.

- **Secure**:

Task: Communications systems will be encrypted for transmission.

Condition: During daily garrison and deployed operations.

Standard: 100% of the communications systems used are - - as a minimum - - bulk encrypted.

Task: Utilize a secure means of communication as the primary way of conducting business.

Condition: During daily garrison and deployed operations.

Standard: 100% of business is conducted using secure communications means.

- **Mission Tailored**:

Task: Tailor access to information on a need-to-know basis.

Condition: During daily garrison and deployed operations.

Standard: Access to information is consciously granted on a need-to-know basis.

Task: Use compartmentalization with password protection on data systems, e.g., GCCS and "home pages."

Condition: During daily garrison and deployed operations.

Standard: Access to information is consciously granted on a need-to-know basis.

- **Value Added**:

Task: Evaluate systems to determine their "value added" components, i.e., strengths and weaknesses.

Condition: During daily garrison and deployed operations.

Standard: Considering our own offensive information operation capabilities, categorize the applicable properties and characteristics of the systems.

Task: Employ systems to capitalize on their "value added" strengths and to minimize their weaknesses below the point of vulnerability.

Condition: During daily garrison and deployed operations.

Standard: Employed systems have known strengths and weaknesses and are employed so they present an operationally acceptable risk.

Task: Properly handle advanced warning of information operation attacks, actual attacks, and attempts at penetration in accordance with standard operating procedures (SOP).

Condition: During daily garrison and deployed operations.

Standard: SOP are in place and everyone is trained to handle advanced warning of information attacks, actual attacks, and attempts at penetration.

- **Joint**:

Task: Communications systems present equal ease of access to the Headquarters and to the Components.

Condition: During daily garrison and deployed operations.

Standard: Electronic voice, data, and VTC systems are directly accessible by those with a need-to-know.

2. Planning Considerations.

- **Information superiority largely depends upon National systems**.

Task: Make maximum use of National systems.

Condition: During daily garrison and deployed operations.

Standard: Effective use is made of National systems in support of operations.

- **Information superiority must be provided down to the lowest possible tactical level.**

Task: Engineer systems to allow need-to-know accessibility from the lowest possible tactical level.

Condition: During daily garrison and deployed operations.

Standard: Conscious operational decisions are made in determining requirements for need-to-know accessibility down to the lowest tactical level.

- **Communications systems do not follow the chain-of-command.**

Task: Engineer systems to provide maximum effective information flow.

Condition: During daily garrison and deployed operations.

Standard: Systems are engineered to capitalize on their technical capabilities to provide maximum effective information flow, e.g., switched common-user networks.

3. Architectural Tenets.

- **Seamless**:

Task: Provide communication systems that allow the unimpeded flow of information throughout the Command on an "as required" basis.

Condition: During daily garrison and deployed operations.

Standard: Communications systems across the Command allow for the unimpeded flow of required information, i.e., full interoperability.

- **Robust**:

Task: No capability or organization is vulnerable to isolation by a single failure (single point sensitive).

Condition: During daily garrison and deployed operations.

Standard: A minimum of two separate means of communication is provided to prevent single point sensitivity of any capability or organization.

- **Automated**:

Task: Identify operations that can be improved by automation.

Condition: During daily garrison and deployed operations.

Standard: Routine and repetitious procedures are automated to the maximum extent possible.

Task: Identify automated operations that can be improved by using a manual process.

Condition: During daily garrison and deployed operations.

Standard: Automation is appropriately applied to the operation.

- **Full Spectrum**:

Task: Determine the portions of the frequency spectrum that can satisfy each operational requirement.

Condition: During daily garrison and deployed operations.

Standard: Each requirement must be capable of being satisfied by a minimum of two distinct portions of the frequency spectrum.

- **Standards Compliant**:

Task: Determine the standards for each capability and rank order by: international commercial standards, U.S. commercial standards, military standards, and no common standards (proprietary).

Condition: During daily garrison and deployed operations.

Standard: Standards should follow the priority order of international commercial standards first, then U.S. commercial standards (if there are no applicable international commercial standards), and finally - - if and only if there are over-riding operational requirements or no commercial standards - - use military standards.

B. Specific: To be published by individual staff directorates, sections, and operational elements.

C. Essential Elements of Information:

- Status of National systems: Green, yellow, or red in terms of being able to provide the required data flow for the deployed command to maintain information superiority.

- Status of Command systems: Green, yellow, or red in terms of being able to provide the required data flow for the deployed command to maintain information superiority.

D. Basic Load of Information:

Task: Determine a basic load of information for the individual staff directorate, section, or operational element.

Condition: During daily garrison and deployed operations.

Standard: The basic load of information must be sufficient to allow the unit to adequately accomplish its mission for 72 hours.

Task: Maintain a basic load of information throughout the operation (pre-deployment, deployment, operation, and recovery).

Condition: During daily garrison and deployed operations.

Standard: Each functional portion of staff and operating entity maintains enough information to adequately accomplish the mission and commander's intent for a 72-hour period.

24 October 1997

"Management by objective works if you first think through your objectives. Ninety percent of the time you haven't." Peter F. Drucker

"Nothing great was ever achieved without enthusiasm."

Ralph Waldo Emerson

Unique C4I Platforms

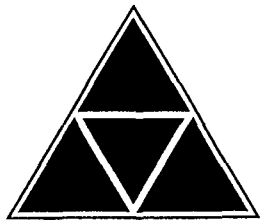
AIR BUOYANT SYSTEMS

Presented by

Information Systems Division

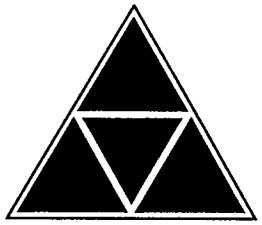


MCA Research Corp.



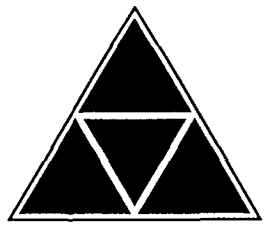
Air Buoyant Systems (ABS)

- **Unmanned Dirigibles Carrying a Platform for C4I Systems**
- **Theater-wide Coverage with Fiber Optic Performance**
- **Operating Above 100,000 Ft.**
- **Recoverable for Technology Upgrades vs. Stranded Investment**



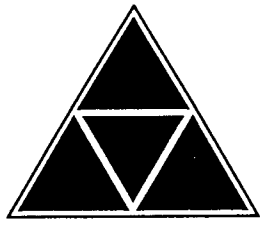
ABS Technology

- **Proven in the Early 70's but With Limited Deployments**
- **Increased Bandwidth Capacity Versus Traditional Satellite**
- **Less Sophisticated User Terminals With Smaller Footprint and Lower Operations & Maintenance Costs**



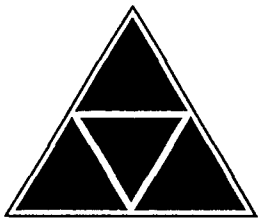
Alternatives to ABS

- Traditional Satellites
- Low Earth Orbit Satellites
- Copper Land Lines
- Fiber Optic Land Lines
- Microwave Systems
- Traditional RF Systems
- Predator-Type Unmanned Aircraft



Components of ABS

- **Earth Station (Gateway)**
  - Antenna, Power Plant, Transmitter
  - Smaller Means Increased Mobility
- **Airborne Platform**
  - Dirigible and Propulsion System
  - C4I Systems Payload
  - Station Keeping System
  - Power Plant

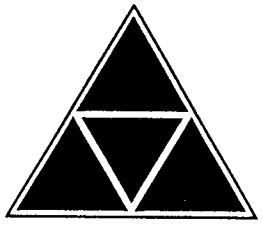


Components of ABS

- **User Terminals**
  - Antenna, Transmitter
  - Data - Laptops, Workstations, Networks
  - Video - Workstations, Projection Devices
  - Voice - POTS, Microphones, Speakers
- **Operations Center**
  - Network Management
  - Station Keeping
  - Maintenance

Benefits of ABS

- **Increased Data Capacity to Areas With Limited or No Service**
- **Cost Effective vs. the Alternatives**
- **Easily Repositioned**
- **Easily Maintained**



Benefits of ABS

- **Heavy Lift Allows Redundancy and Higher Reliability**
- **Can Carry Other Intelligence Gathering Packages**
- **Above Most Air Defense Umbrellas**

CEDSS

Domestic Support Operations vs CT Support Operations

Problems:

Medical Assistance:	Elderly & Infirm Triage Centers in coordination with Hospitals & Treatment Centers Evacuation & Treatment - Burn Centers
Communications:	Re-establish Regional & Inter-Agency Links
Intelligence/Information:	Differentiate & Direct
Asset Control & Management:	Mobile Hospital Units - Direct &Control Logistics - Food, Water, Medicine Transportation
Law Enforcement:	Coordinated and Directed

Center for Emergency Disaster Studies & Strategies

Evaluate Concepts & Principles of Available Domestic Support

Define the Roles and Responsibilities of all available Domestic Agencies and the limits and parameters of their Assistance

Legal Considerations & Restraints

Evaluate the Availability of Logistics and Limits on Support Operations

Develop Simulation Training Modules that Integrate the Lessons Learned from prior natural disasters and Integrate Available Agency Capabilities

Prepare Emergency Disaster Directors and Teams with realistic scenarios resulting from:
- Lesson Learned
- Resources Available (MOAs & MOUs)
- Technology Developed

Review and Integrate in a real-time mode, each new natural Disaster in light of the above considerations, and disseminate the lessons learned and experiences of participants.

Provide a Forum for the Exchange of Information, Development of Simulation Training Symposiums, Training of Emergency Personnel, and Stimulate Technology Development.

C^4I: Compounded Crisis Response Operations

Amidst the chaos and ravages that are part and parcel of natural disasters such as a Hurricane, Flood, Earthquake or Volcanic eruption, in the despair and frustration that inevitably becomes an integral part of the recovery, search and rescue, damage assessment and response initiatives that follow these disasters, imagine, if you would, that a group of people (terrorists) representing a foreign, unfriendly nation or perhaps, a dissident internal militia-type group were to strike at the very core of such an existing disaster. The introduction of a chemical or biological agent, by such a group, or even cataclysmic bombings of POL storage sites located in a disaster area, causing massive, additional casualties, would introduce a new and almost paralyzing element to events.

Such an attack, during a large-scale natural disaster could not be addressed, identified, treated or controlled due to the breakdown in normal command (Civil Authority), control (Law Enforcement) and communications (telephone, power, radio, television, transportation, etc.) links. No amount of normal disaster planning could predict such an event, nor prevent massive casualties, nor compensate for the overwhelming disruption to normal civil authorities recovery operations.

Existing disaster agencies, in addition to medical facilities and National Guard support assets, would all be overwhelmed by the speed and intensity of such events. and or their capabilities to deal with.

This type of attack would most probably be followed by an announcement of the group's responsibility for this terrorist act, with threats of additional further devastating strikes to follow, further exacerbating the public's helplessness and frustrations. This public acknowledgement of responsibility and the demands of the responsible individuals or group would be aimed at inducing public panic, which is the very goal of such a terrorist act.

Demands for a swift responses to these attacks and threats of further strikes, in the midst of the chaos that follows natural disasters, would be lost in the cries for assistance, from

all levels of government assistance, and the inevitable inter-agency bickering that arises between agencies vying for lead authority (To determine whether there exists a Crime scene or a Disaster site). For example, in the Oklahoma City bombing, the immediate determination that a crime scene scenario existed requiring isolation of the entire area of the disaster, hampered rescue operations. The subsequent bickering over legal authority between agencies such as the FBI, AT&F, State Police or CT Task Forces, wasted precious rescue tasks. Every agency issued news releases via its PR coordinators, announcing that it was in charge and should be the only single coordinating agency addressing the situation.

Determining the extent of the threat and damage resulting from such an insidious attack would be hampered by:

Broken communications links,

Power out – Telephone lines severed – Emergency Crews Overwhelmed

Inaccessibility to the damaged areas,

Road networks inaccessible – trapped civilians require medical assistance or evacuation -

Overflowing casualty reports,

differentiate victims of natural disaster versus attack – determine level and type of assistance required – determine support assistance required – set up triage centers and direct victims to appropriate treatment centers.

Evaluate which level of government (local, state, national or Joint Task Force) assistance is required and available:

- Biological – Chemical
- Medical supplies required – sources identified – support confirmed and coordinated
- Determine a needs assessment for military support –
    - Transportation
    - Medical assistance
        - Surgical teams
        - Medivac
        - Emergency treatment Centers
    - Communications support
        - Re-establish commo links to all elements of Recovery effort
    - Transportation assets
        - Vehicle & Aviation support
    - Technical support
        - Water purification units

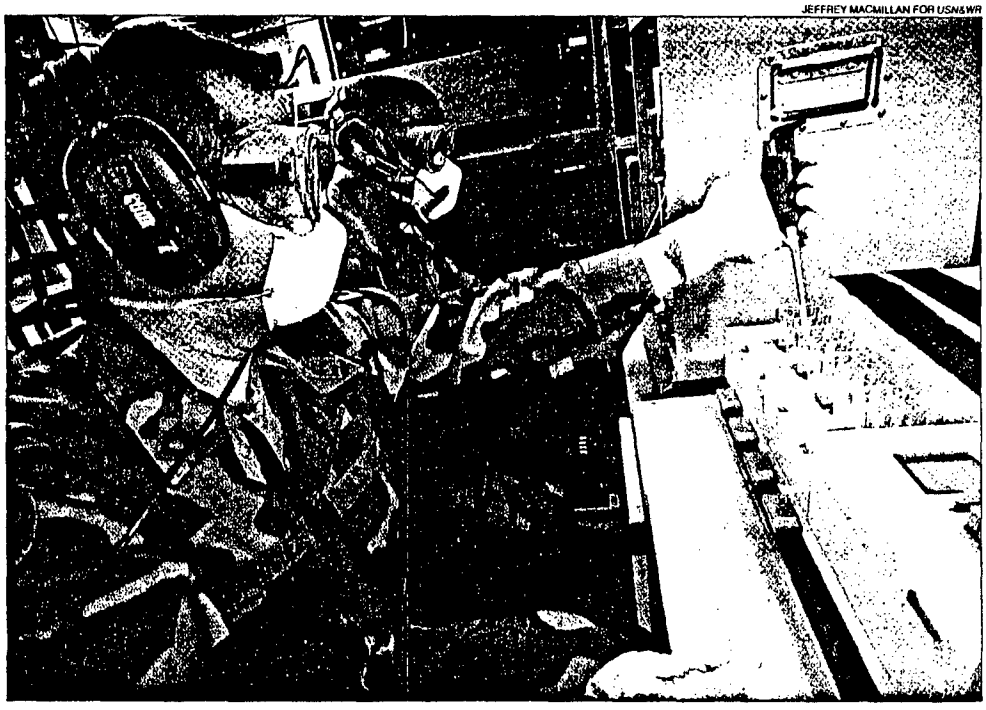
- Engineering equipment and teams
- Decontamination units

- Logistics Support
  - Food – Medical Supplies
  - Portable food kitchens

The new terror fear: biological weapons

Detecting an attack is just the first problem

JEFFREY MACMILLAN FOR USN&WR



In the BIDS detector system, it can take a half-hour to determine if deadly microbes are present.

BY NICHOLAS HORROCK

America is stepping up preparations to cope with biological warfare. This month, at undisclosed locations in Denver, medical and weapons experts will begin to assess the city's ability to contend with terrorists using biological, radiological, or chemical weapons of mass destruction. Denver is the first of 120 cities where federal authorities will evaluate emergency capabilities under a $42.6 million Domestic Preparedness Program that is the largest civil defense initiative since the Cold War. This program begins two weeks after the Pentagon granted the first contract in a possible $400 million program to develop a detection system to sniff out deadly airborne microbes spread by an enemy.

Three events have created the new urgency: Iraq deployed missiles bearing anthrax germs, botulinum (a toxin that spreads the deadly disease botulism), and aflatoxin (a poison derived from mold) during the 1991 Persian Gulf war, and its biological weapons program continues, according to intelligence experts; a 1995 Tokyo attack in which the cultlike terrorist group Aum spread nerve gas in the subway system killing 12 people; and a little publicized conviction in Ohio last month of a microbiologist named Larry Wayne Harris, who pleaded guilty to fraudulently obtaining bubonic plague cultures. Harris, who has ties to right-wing groups, was sentenced to 18 months probation and community service. The plague cultures were obtained by Harris with such ease that in 1996 Congress tightened laws on commerce in deadly biological materials to make sure they were ordered for legitimate medical and scientific purposes.

Poor man's nukes. The CIA now says Iraq has been joined by North Korea, Iran, Libya, Syria, and even China in the quest to make biological weapons. Their motive is simple: Biologicals are cheaper and easier to make than nuclear or chemical weapons, and they can be equally as devastating. The U.S. Office of Technology Assessment once estimated that a small private plane, with 220 pounds of anthrax spores, flying over Washington on a clear, windless night, could trail an invisible, odorless mist that would kill between 1 million and 3 million people.

However, retired Army Col. Karl Lowe, an arms-control expert, argued in a recent essay that it would be very hard for terrorists to carry off a biological attack. Many biologicals can be dissipated by wind or rain, or must be ingested in such enormous amounts as to make their use as a weapon of mass destruction impossible.

Though difficult to execute, a biological attack would be virtually impossible to detect in its early stages. "Ideally we would like to develop a detection system using something remote, like a laser beam that could detect and identify a biological agent at standoff distances," says Assistant Defense Secretary Harold Smith. But that prospect is years away, so the Pentagon is trying to develop a "point detector" that could be mounted on a remote-controlled vehicle. It should be able to sniff air samples and determine within 15 minutes whether any of 26 dangerous agents are present, according to Brig. Gen. John Doesburg, whose command awarded the first contract for such a vehicle last month.

The best detector now is a Humvee mounted with what appears to be a small *Hansel and Gretel* house with three chimneys, named in the Army's cumbersome fashion the Biological Integrated Detection System, or BIDS. The problem with BIDS is that it takes two persons to operate, requires 30 to 45 minutes to identify biological agents (an eternity in combat), and can simultaneously identify only four. Next year, DOD will field a temporary improvement, the Air Base/Port Biological Detection system, at bases in two areas of high tension, like South Korea and Saudi Arabia.

On the civilian side, a law passed last year requires DOD to go beyond troop protection and assist in civil defense. An incident in Washington, D.C., last month added urgency to the effort. The headquarters of the B'nai B'rith, the national Jewish service organization, received a package with a threatening note and the laboratory words for anthrax on it. It turned out to be harmless, but had anthrax been loose in Washington's downtown, U.S. readiness would have faced the supreme test. ■

In a Test, Agencies Brace For a Terrorist Assault

Officials to Stage Mock Disaster in TriBeCa

By KIT R. ROANE

With an eye toward reducing the potential danger of a terrorist chemical attack, the city's Office of Emergency Management started a series of antiterrorism drills yesterday that will culminate today with a full-scale enactment of a toxic disaster in TriBeCa.

The drills, which began yesterday morning in 42 city hospitals, are designed to test the reaction of emergency response agencies to a chemical gas attack similar to the one that occurred in Tokyo two years ago. In that attack, members of the Aum Shinrikyo cult released homemade nerve gas on several subway cars, killing a dozen people and injuring 3,800 more.

The drill planned for today is to involve hundreds of city, state and Federal law enforcement officers. Although New York City's public safety departments staged a similar mock attack in a subway station one month after the disaster in Japan, law enforcement officials involved in today's test said that the city would be concentrating on an above-ground scenario.

"We are dealing with some new issues and want to figure out the best way to react to them," said Jerome Hauer, the director of the Mayor's Office of Emergency Management, who said the exercise has been nine months in the planning. "We are always trying to improve our emergency planning and response to various situations and this is nothing new. This is not in response to any real threat."

During a news conference yesterday, Mayor Rudolph W. Giuliani said that while there has been no specific threat, concerns were raised in March when the police responded to a report that 15 drums labeled Sarin gas — the type used in Tokyo by the Aum Shinrikyo cult — had been found in a house in Douglaston, Queens. The drums were later determined to have contained a harmless gas, but Mr. Giuliani said yesterday that he, the police and fire commissioners and Mr. Hauer "thought it would be a good idea to go through a formal exercise, just in case."

"The purpose of it is to improve our emergency procedures," the Mayor said. "There is no reason to believe that something like that is going to happen."

The exercise began yesterday morning with volunteers visiting the 42 hospitals with complaints of various symptoms of chemical exposure, Mr. Hauer said. The doctors and nurses at the hospitals, all of whom know that the symptoms were being reported as part of the test, were charged with figuring out the type of chemical exposure that matched the symptoms and how best to treat the victims without becoming a victim themselves or spreading the contamination.

This exercise is to continue today with nearly 1,000 law enforcement officers and emergency workers descending on a two-block area in TriBeCa with the mission of limiting the damage done by a hypothetical chemical attack.

"We regularly do disaster drills to keep the system in shape," said one law enforcement official, who spoke on condition of anonymity. "In this case, we know to be prepared, that it is going to happen, but haven't been given any particulars. Basically we will show up and if we step into a bad spot, we become victims."

Mr. Hauer said that eight weeks ago his office worked with Nassau County officials through a mock plane crash near Kennedy International Airport, hoping to improve inter-agency response to disasters like last year's crash of TWA Flight 800. He also said that $1 million in Department of Defense funds has been used for disaster-preparedness training for more than 3,600 New Yorkers, who went back to their various agencies and trained others.

Although city agencies have been conducting such training exercises for years, antiterrorism experts said that governments had increasingly been focusing on the complexities raised by chemical attacks since the attack in the Tokyo subways.

At 42 hospitals, the scenario of treating exposure to chemicals.

Brian Jenkins, the deputy chairman of the investigative consulting firm of Kroll Associates, noted that in the last two years several people have been arrested after brewing chemicals and labeling them Sarin gas. Others, he said, had taken to sending packages of a gelatinous substance to politicians they did not like. As opposed to the bombings that terrorists have employed in the past, Mr. Jenkins, who was also the RAND Corporation's research director on terrorism, said that any scenario where chemicals were used would be fraught with unknown difficulties.

Among them would be identifying the chemical used, figuring out whether the vapor was coming from a liquid or some type of dispersion device, and attempting to help victims without spreading the contamination.

"If you see people gasping, choking and falling down," he said, "do you immediately rush over and try to help evacuate people — thereby potentially becoming a victim yourself — or do you wait? This is not like a fire or explosion because chemical weapons require special handling. Ever since the Tokyo incident, a lot of people have been grappling with difficult issues like these."

Deadly Strike

The Pentagon takes aim against chemical and biological terrorism

By Katherine McIntire Peters



SANDY SCHAEFFER/MAI

The scenario was plausible: Congress was preparing to vote on controversial legislation that was sure to incite furor among extremist groups hostile to the government. Fearing a terrorist attack, Washington emergency and security workers were on alert. Just in case it was needed, a Marine Corps counter-terrorism unit was standing by at a naval base in Anacostia, a few miles south of Capitol Hill.

So when "terrorists" released the deadly nerve gas sarin into an underground parking garage across from the Rayburn House Office Building on April 30, the Marines and District of Columbia emergency personnel responded quickly in a portentous demonstration of how the military can assist local officials facing global threats. More than 100 Marines, many wearing chemical-protection suits and gas masks, and carrying electronic detection and monitoring equipment, swarmed the area around the garage, assisting "sick" pedestrians. The Marines quickly set up tents where patients could be sprayed with a bleach solution to decontaminate them so medical personnel could begin treatment.

Although the demonstration was staged, the threat is real. Two years ago, members of a Japanese cult killed 12 people and sickened nearly 5,000 others when they released sarin gas into the Tokyo subway. The incident heightened concern about the vulnerability of U.S. cities to similar acts of terrorism.

"Most of our adversaries now know better than to go against us force-on-force," says Lt. Col. Arthur Corbett, commander of the Marine Corps Chemical/Biological Incident Response Force (CBIRF), whose members participated in the demonstration. As a result, they are more likely to resort to terrorism, using biological and chemical weapons against U.S. troops and civilians, he says.

Biological and chemical weapons have long been considered the poor nation's nuclear weapon, because they are comparatively easy and cheap to develop and use and can kill thousands.

Defense officials estimate that about 30 countries possess mature chemical and biological weapons programs, at least 12 of which have advanced missile capabilities. In a speech at the University of Georgia in April, Defense Secretary William Cohen said, "This scenario of a nuclear, biological or chemical weapon in the hands of a terrorist cell or rogue nation is not only plausible, it's really quite real."

FBI Director Louis Freeh is so concerned about terrorism in the United States he has tripled the bureau's counter-terrorism force over the last three years, raising to 2,600 the number of FBI personnel dedicated to the effort. The CIA, too, has weighed in with a recently created Terrorism Warning Group, "whose sole mission is to make sure that civilian and military leaders are alerted to specific terrorist threats," CIA Director George Tenet told the Senate Appropriations Committee in May. At the same hearing, Freeh said several Middle East terrorist organizations have U.S. cells, "which could be used to support terrorist activity here."

To beef up defenses against such an attack, the Federal Emergency Management Agency is heading up an interagency Domestic Preparedness Program to develop a coordinated federal response to terrorism and enhance state and local response capabilities.

The case for such a program was well-made April 24, just a week prior to the Marine Corps' Capitol Hill demonstration, when mail-room personnel at the Washington headquarters of the Jewish service organization B'nai B'rith discovered a package containing a broken Petri dish with a label suggesting it held the deadly bacterial agent anthrax. More than 100 workers were quarantined for over eight hours and several city blocks were cordoned off while emergency personnel responded to the situation. Because Washington firefighters do not have decontamination tents, some employees were forced to strip to their underwear in public while they were sprayed with a solution of bleach and



Above: Japanese emergency workers respond to a chemical attack on the Tokyo subway in March 1995. At right: U.S. Marines demonstrate how they could assist emergency workers in Washington if a similar attack occurred.

AP PHOTO



Marines assist local emergency response workers in the Washington drill, rushing stretchers to "sick" victims.



SANDY SCHAEFFER/MAI (2)

Emergency teams rush to help victims after a simulated chemical attack in a Capitol Hill parking garage.

water in case they had been exposed to the lethal agent. Only many hours later did scientists at the Naval Medical Research Institute in Bethesda, Md., determine the package was a hoax.

A Growing Arsenal

Under the Domestic Preparedness Program, the Defense Department will take the lead in evaluating and training officials in the 120 largest U.S. cities, beginning with 27 cities this year.

The 1997 Defense authorization bill provides $42.6 million for the program, including $6.6 million to support Health and Human Services Department metropolitan medical strike teams which could provide emergency health-care response following a terrorist attack. The Clinton administration requested an additional $48 million for the Defense Department's support for the Defense Preparedness Program in 1998.

The Capitol Hill demonstration sent a useful message about the resources the military can bring to bear in the event of an attack on civilians, says Lt. Gen. Charles Wilhelm, commander of U.S. Marine Corps Forces, Atlantic. Wilhelm established CBIRF in April 1996, under orders from Marine Corps Commandant Gen. Charles Krulak, who believed there was a need for a military unit dedicated to quick response to the growing chemical and biological terrorism threat.

"It's desirable to demonstrate to our own leaders and perhaps to others that we do in fact have this capability," Wilhelm says.

The unit has no direct counter-terrorism role, but instead is trained to provide an emergency response, decontaminate victims and establish a medical triage system. The unit also can quickly detect some chemical and biological agents, secure the area and help preserve the crime scene for law enforcement officials.

"Everybody wants to catch the fish but nobody wants to clean them," says Corbett, referring to the glamour of catching terrorists compared to dealing with the results of their acts. "We at CBIRF clean fish."

CBIRF is only one weapon in the Pentagon's growing arsenal to combat chemical and biological terrorism. The Pentagon is establishing a Chem-Bio Quick Response Force, which includes CBIRF, several Army research and tactical units, and the military's chemical depots.

Lt. Col. Timothy Madere commands the Army's Technical Escort Unit, based at Aberdeen Proving Ground, Md. The unit is expert at handling, dismantling and disposing of chemical and biological weapons. At a time when many units are facing cuts, the 152-member unit will grow to 180 positions to better handle their burgeoning mission list.

"We're very busy," Madere says. Last year, technical escort teams responded to hundreds of calls for assistance. The calls were for a range of things: A soldier digging a fox hole at Fort Polk, La., unearths a long-buried chemical weapon. Toxic gas released in a fire at a pesticide plant in Arkansas threatens to contaminate the environment and harm firefighters. A cache of biological bomblets is discovered buried at Wright Patterson Air Force Base in Ohio. Contractors working in Washington and New Jersey discover buried munitions in residential areas.

In each case, members of the Technical Escort Unit were dispatched to the scene within hours, sometimes minutes. Members are specially trained to handle a multitude of hazardous materials and operate sophisticated detection and monitoring equipment.

"My people do dangerous work," Madere says. "It's not pleasant or pretty."

While most of the calls for assistance are for accidents or to rectify the hazardous weapons disposal practices of the past, terrorism looms large. In March, New York City police arrested amateur chemist Lester Deily for reckless endangerment following a three-hour standoff after they were called to his home after receiving reports of hazardous material in his front yard. After the arrest, city officials called in members of the Technical Escort Unit when they discovered a canister labeled "Biological Hazard/Sarin Gas" in Deily's home, along with 200 gallons of jet fuel and other explosive material, scientific equipment and generators. The Army team removed the canister back to Aberdeen where they tested it for the gas. The canister proved empty, but the possibility that it contained the highly lethal nerve agent was real.

Rising Threat

The possibility of biological or chemical attack is a growing a concern at the Pentagon. In the Quadrennial Defense Review (QDR), the department's major review of military strategy and plans released in May, Defense planners recommended the department allocate $1 billion in new funding for defense against chemical and biological weapons.

The request for more funding for chemical and biological defense was music to the ears of Army Brig. Gen. John Doesburg, the Defense Department's joint program manager for biological defense.

"It's an enviable position to be in," he says. Extra money would likely go toward buying more protective suits, staging advanced technology demonstrations for protecting ports and airfields, and improving detection and response capabilities, he says.

In some respects, biological weapons pose a more serious threat than chemical weapons, Defense officials say. They are cheaper to make, far more deadly and harder to detect. Biological agents are odorless and colorless and symptoms may not develop until hours after an attack, during which time contamination may continue to spread.

Federal officials estimate that a small plane properly equipped could disperse enough anthrax to kill millions of people in a large metropolitan area. The invisible, odorless agent would not likely be detected until people began dying, hours later. By then, it would probably be too late to save those people infected but still living.

"Biological terrorism provides [paramilitary groups and terrorists] a means to make their point and to do it very dramatically," Doesburg says. Under Doesburg, the military is developing more sophisticated biological agent detection equipment. The military currently uses what's known as the Biological Integrated Detection System, a large unit that fits on the back of a Humvee and is operated by two people sitting inside—a mechanism far too cumbersome to be useful in a terrorist attack. Next year, Doesburg says, the Defense Department will field an interim system to better protect ports and air bases overseas.

"Biological terrorism provides [paramilitary groups and terrorists] a means to make their point very dramatically."

Army Brig. Gen. John Doesburg

Recent incidents have infused the issue with a sense of urgency. They include the sarin attack in Tokyo, Iraq's development of biological weapons discovered following the Persian Gulf War, and other less publicized incidents of rogue chemists tied to right-wing paramilitary groups obtaining biological agents.

"All of these things heighten the awareness of the vulnerability we have here in the United States—a very open society—to someone who wants to use this type of weapon," Doesburg says.

Critical Research

Forty miles north of Washington, scientists at the U.S. Army Medical Research Institute of Infectious Diseases at Fort Detrick, Md., don't need to read about the hazards of biological agents to understand the urgency. They work with the deadly agents every day at the institute—the only place in the United States where research is conducted in countering the use of biological agents as weapons.

"We are the only organization, not just in DoD, but in this country, that is focused on developing drugs and vaccines for these kinds of agents," says Col. David Franz, commander of the institute. The institute conducts research to develop strategies, products, information, procedures and training programs to medically defend against biological warfare threats.

Despite the institute's unique capability and mission, however, Franz expects he will have to further cut his staff of 430, already cut by one-third since 1991 when more than 600 civilian and military employees were assigned to the institute. While the QDR recommended more funding for chemical and biological defense, it also recommended major cuts to Defense infrastructure. As a research and development function of the medical community, the institute with its $20 million budget (down from $30 million in 1991) will be a prime target, Franz says. Such cuts could prove critical to efforts to defend against a biological attack.

While its staff and budget are shrinking, the institute's mission continues to grow. Institute staff routinely provide expert advice and assistance in handling biological agents to other federal agencies. During a biological attack, their contribution would be invaluable. "An expert who understands physical and biological characteristics of the agents and dissemination systems, even making recommendations via telephone, can make an enormous difference," Franz says. Because institute scientists study and handle biological agents on a daily basis, they are uniquely qualified to recommend appropriate management and response to a biological attack. Currently, institute employees are preparing training materials to be distributed to emergency workers through the Domestic Preparedness Program.

"While, public safety must be No. 1, expert evaluation of the real threat and a perfectly adequate, but measured response can snatch from the terrorist what he/she wants most: front page and live coverage," Franz says.

Battlefield threats are easier to defend against than terrorism, Franz says. During war, soldiers may be vaccinated against likely biological agents or, if vaccines are not available, they may at least be trained and prepared with medical antidotes should they become infected.

"Terrorism is such a tough problem," Franz says. "The opportunity to prepare for a specific terrorist incident will be extremely rare—much like preparing for an emerging disease outbreak. Unless we happen to have excellent intelligence, we can only be prepared to respond after the fact."

Fear Factor

While the physical danger of biological weapons is real, the psychological danger may be just as debilitating.

During the Persian Gulf War, Iraq's chemical and biological weapons capability was widely discussed in the press and assumed to be extensive. Between January 18 and February 28, 1991, Iraq sent 39 Scud missiles into Israel. While there were only two deaths associated with the missile attacks, more than 1,000 people were medically treated. More than half were treated for anxiety and 230 were hospitalized for overdosing on atropine, taken as a result of the attacks, Franz wrote in a pamphlet titled "Defense Against Toxin Weapons." If even one of the warheads contained a biological agent which killed or sickened a few people, the terror effect would have been even greater," he wrote.

While Iraq did in fact have a biological

U.S. Targets

DoD will work with emergency personnel in 27 cities this year to assess vulnerability to terrorist attack. Workers in 120 cities will be trained to cope with such attacks.

Anchorage, Alaska	Los Angeles
Atlanta	Memphis, Tenn.
Baltimore	Miami
Boston	Milwaukee
Chicago	New York
Columbus, Ohio	Phoenix
Dallas	Philadelphia
Denver	San Antonio
Detroit	San Diego
Honolulu	San Francisco
Houston	San Jose, Calif.
Indianapolis	Seattle
Jacksonville, Fla.	Washington
Kansas City, Mo.	

capability—they had produced anthrax and botulinim (10,000 times more potent than sarin) and were capable of disseminating them from the air—weather and battlefield conditions (the coalition forces maintained control of the air) rendered the weapons militarily ineffective.

"If everything had worked out just right for [the Iraqis] they could have created mass casualties. But much of what they did could have had enormous psychological effect," Franz says. "They could have almost shut us down. Maybe not killed thousands, but they could have shut us down as an effective force by the fear factor and the panic. Even if they only made a few people sick it would have been very effective," he says.

Franz downplays the Iraqi threat because he's seen what the Russians are capable of: "It makes Iraq look like a Sunday School picnic. [The Russians] have just enormous capability and they worked for years and years to develop that capability."

At the height of the Cold War, in 1972, the United States and the Soviet Union pledged to end their development of biological weapons with the signing of the Biological Weapons Convention. The United States then ended its biological weapons program, destroying all weapons and continuing research only into the medical defense against and detection of biological weapons.

But in 1979, U.S. intelligence officials grew suspicious of Soviet intentions when dozens, perhaps hundreds, of people mysteriously died in Sverdlovsk, a city in the Ural Mountains. The Soviets attributed the deaths to food poisoning, but U.S. officials suspected an accidental release of a biological weapon.

U.S. fears were confirmed in 1992, when Russian President Boris Yeltsin acknowledged the Soviets had continued their program on a large scale. Yeltsin then signed the Trilateral Joint Statement on Biological Weapons with the United States and Britain to limit proliferation. The 1979 deaths in Sverdlovsk were in fact caused by the inadvertent release of anthrax from a nearby biological weapons facility. The wind carried the anthrax spores 40 kilometers, killing dozens of people and livestock. Officials at the facility apparently weren't aware of the accidental release until people began to die unexpectedly.

Franz was a member of the first two teams to visit Russia and tour some non-military biological facilities—military facilities remain closed to U.S. inspectors.

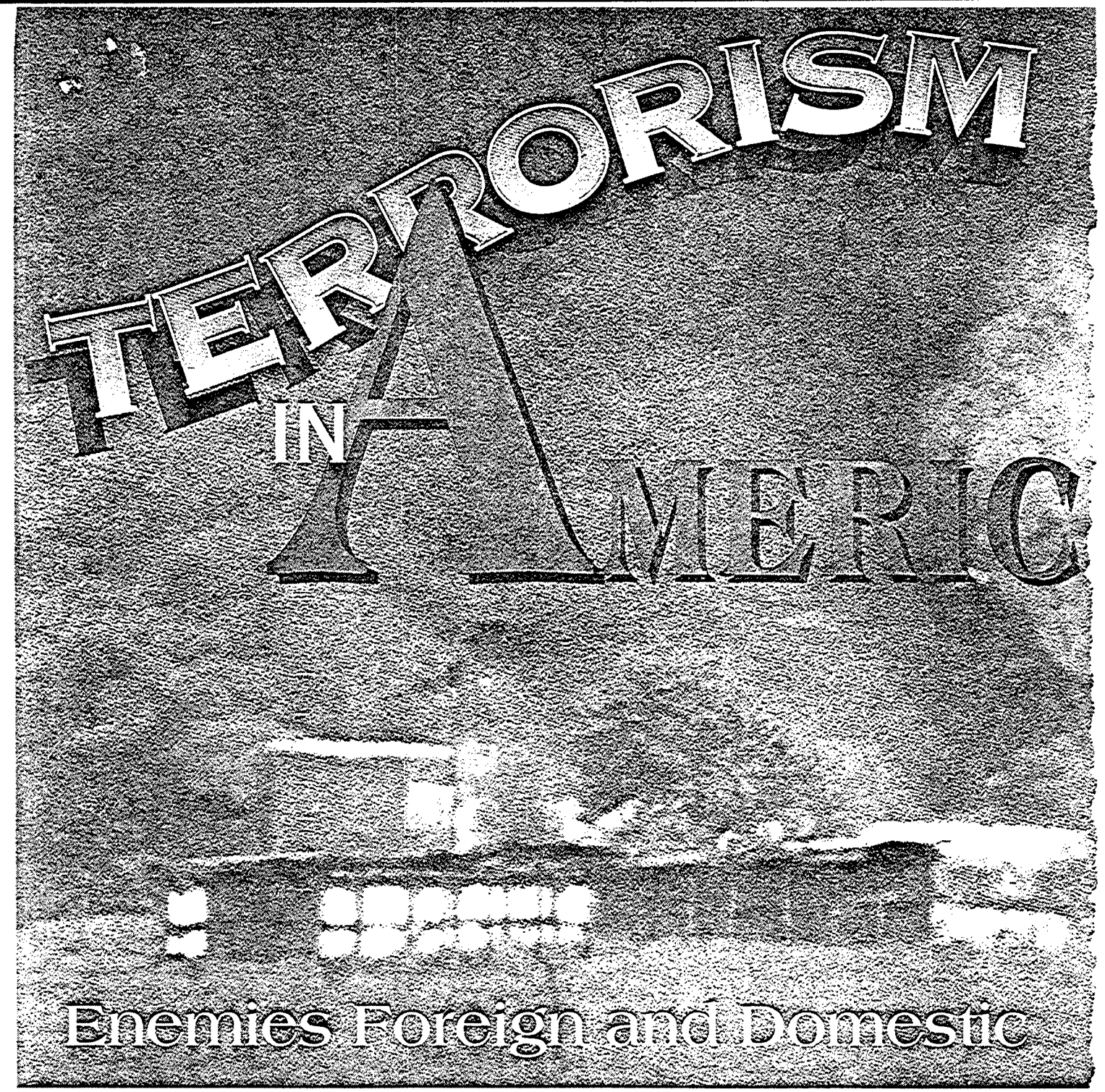
"The Russians have developed and tested [an effective] program," Franz says. "A lot of that is still classified, but they certainly did their homework and they worked on a lot of different agents and a lot of different delivery systems and are capable of producing large quantities of biological weapons."

While the break up of the Soviet Union eased the threat of conventional warfare, it has only exacerbated the threat of biological terrorism, Franz says. "We're concerned about what happened to all those scientists. They had enormous facilities and thousands of people working on these issues. And they're broke now."

The U.S. government is working with Russia and former Soviet states to channel scientific efforts into non-military research and development. Nonetheless, there is a fear some of those scientists may sell their skills and expertise to rogue nations and sponsors of terrorism.

"I believe in order to make an effective terrorist weapon that will wipe out half of a city, you will need state sponsorship," Franz says. "You're not going to make [such an agent] in your bathtub in Rockville."

"That's the good news. The bad news is, with the break up of the Soviet Union, that capability is out there, and there are people who are interested in obtaining it." □



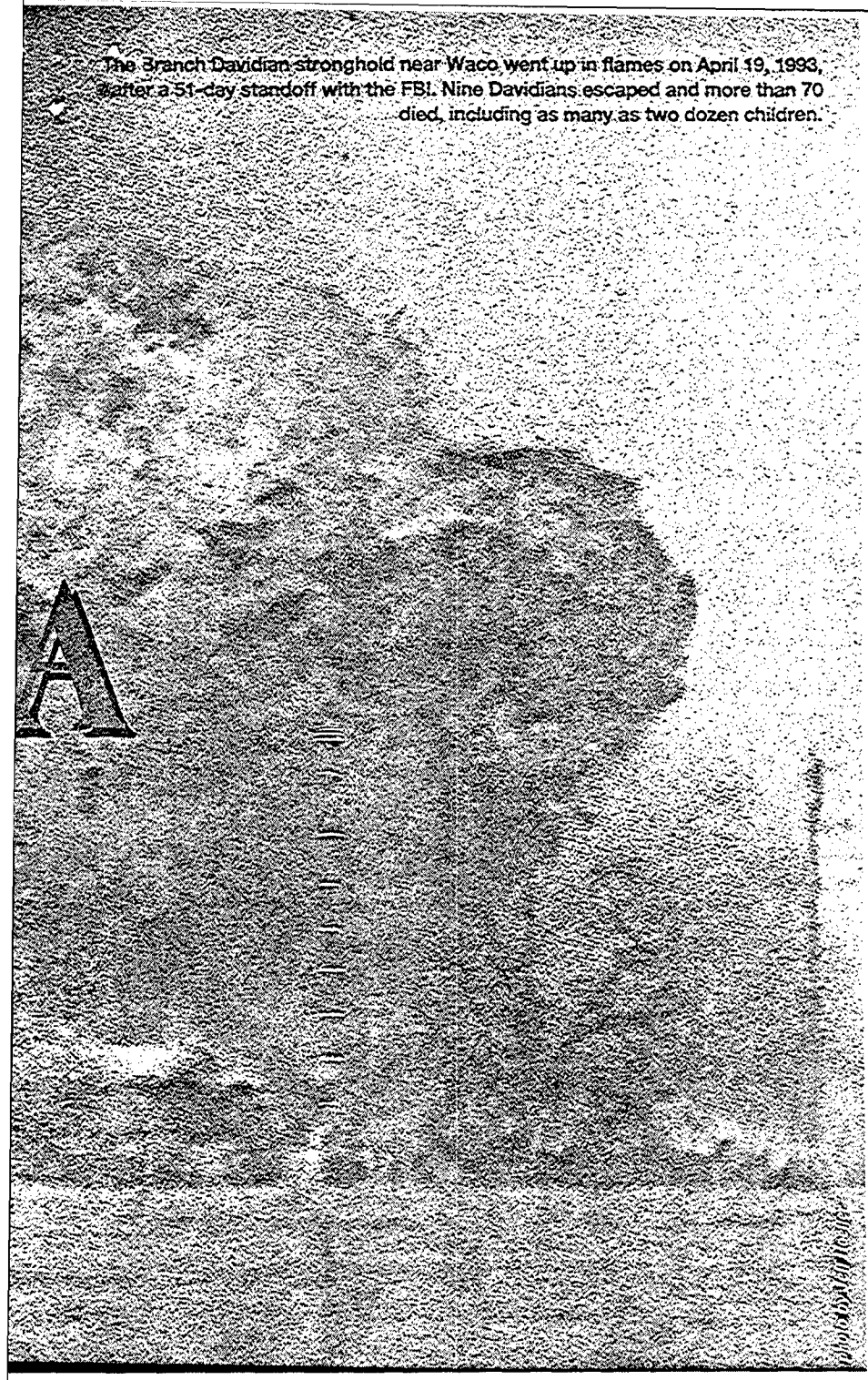
By Richard Abshire

Terrorism is a controversial subject as old as history and as timely as the Oklahoma City bombing trial. Americans are still reeling from the shock of realizing that we are not immune to its contagion, a condition aggravated by a lack of historical perspective, the still-fresh images of a bombed-out day care center in the Alfred P. Murrah building, and the confusion among experts and civilians alike about exactly what terrorism is.

Terrorism in America

In one form or another, what we call terrorism today has been a part of life in this country since before it was a country, from colonial border raids and Indian Wars to pre-Civil War Bloody Kansas and the first and second generations of the Ku Klux Klan. In the early 1950s, Puerto Rican nationalists shot up the House of Representatives and lost a gun battle with President Truman's security detail as he stepped out the front door of his temporary home at the Blair House. A number of 1960s radical groups viewed bombings as political statements, armed robberies as appropriations, and assassination as street theater.

In the 1970s, international terrorism became a fact of life in Europe and the Middle East. Here at home there were isolated bombings, a short-lived wave



The Branch Davidian stronghold near Waco went up in flames on April 19, 1993, after a 51-day standoff with the FBI. Nine Davidians escaped and more than 70 died, including as many as two dozen children.

of airliner highjackings and the Letelier assassination in Washington DC, but by and large Americans enjoyed the illusion of immunity. In the 1980s in Washington DC, Los Angeles and Utah, terrorists murdered two Iranian opponents of the Ayatollah Khomeini and a pair of Libyan college students who reportedly had offended the Qadaffi regime. A series of planned bombing campaigns targeting New York City and Washington DC were aborted by timely arrests between 1987 and 1989. By and large, America's luck held.

Over the last 25 years, while American interests were among the most frequently targeted by terrorists abroad, domestic terrorist incidents remained among the lowest in the world. The FBI reported only four in 1992.

But the reality of our domestic vulnerability was brought home for the first time in February 1993, by the bombing of the World Trade Center in New York City by Islamic fundamentalists. Six Americans died and 1,000 were injured in an attack against civilians that its designers had intended to be much worse. In June of that year, authorities uncovered a second plot by another Islamic terrorist cell to bomb the United Nations building as well as commuter tunnels and a bridge between New Jersey and Manhattan, all in conjunction with a planned armed raid on the headquarters of the FBI's New York field office.

By and large, America has enjoyed the illusion of immunity to terrorism within its borders. But with incidents like the bombing of the World Trade Center and the federal building in Oklahoma City, reality is hitting Americans hard.

Given the unforgettable images of the World Trade Center bombing and the trials of Islamic fundamentalists charged with its planning and execution, it is not surprising that many Americans' suspicions turned to the Middle East on the morning of April 19, 1995, when news first broke of the bombing of the federal building in Oklahoma City.

There had been incidents involving ultra-environmentalists out West and anti-abortion groups around the country, and a white separatist group calling itself The Order that launched an 18-month crime wave in the Pacific Northwest in 1983-84. But the main threat for years had been foreigners nursing grievances born of war and politics on the other side of the world.

But there were people around the country who watched the news from Oklahoma City and knew the significance of the date, April 19. They suspected that Ruby Ridge, Waco and the Brady Bill had fundamentally altered

TERRORISM IN AMERICA

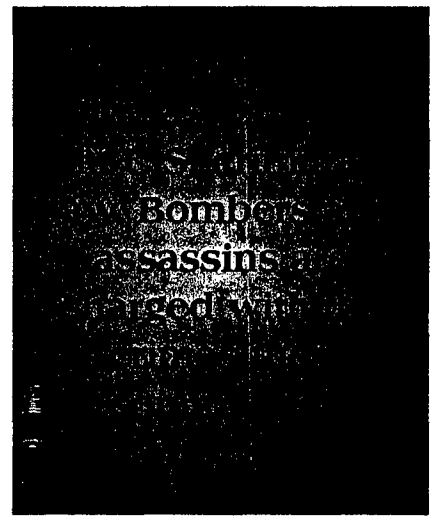
the landscape of terrorism in America and speculated that the culprits, this time, were much closer to home.

The definition problem

Any discussion of terrorism has to address the problem of definitions. It is a problem because there is no more than the most general agreement on what terrorism is. As terrorism expert Brian Jenkins noted several years ago, terrorism has become a "fad" word, indiscriminately applied to fit a wide range of interests and agendas. For the record, the Federal Bureau of Investigation, defines terrorism as ". . . the unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof in furtherance of political or social objectives."

This seems straightforward enough, but there are problems. For one thing, according to a 1995 study by RAND, a nonprofit think tank for the National Institute of Justice, the FBI doesn't seem to follow its own definition in reporting incidents. For example, according to the report, the FBI does not classify as terrorist acts ". . .many hateful acts and crimes that might, at first glance, appear to meet the bureau's definition. . .racially or religiously motivated acts of violence, so-called hate crimes. . . attacks on medical clinics performing abortions, attacks on laboratories and clinics performing experiments on animals, and the sabotaging of logging operations. . ." The report goes on to explain, "Generally, in addition to the definition. . . the FBI also seeks a conspiratorial dimension when evaluating potential acts of terrorism. . . [which] might include evidence that more than one crime was intended to be committed, or that a network of individuals prepared to carry out additional acts stands behind lone perpetrators. Thus, the murder of abortionist Dr. Gunn in Pensacola, Florida, was considered an isolated criminal act, in large part because evidence depicting a conspiracy was lacking."

Another problem the RAND study found was that state and local law enforcement agencies apparently don't subscribe to the FBI's definitions. They do consider skinhead thuggery, abortion clinic bombings and sabotage



by radical environmentalists terrorism and many of these agencies, according to the RAND report, may not be aware that all terrorist incidents are to be reported to the FBI for investigation. When local agencies do report incidents to the FBI, the FBI often does

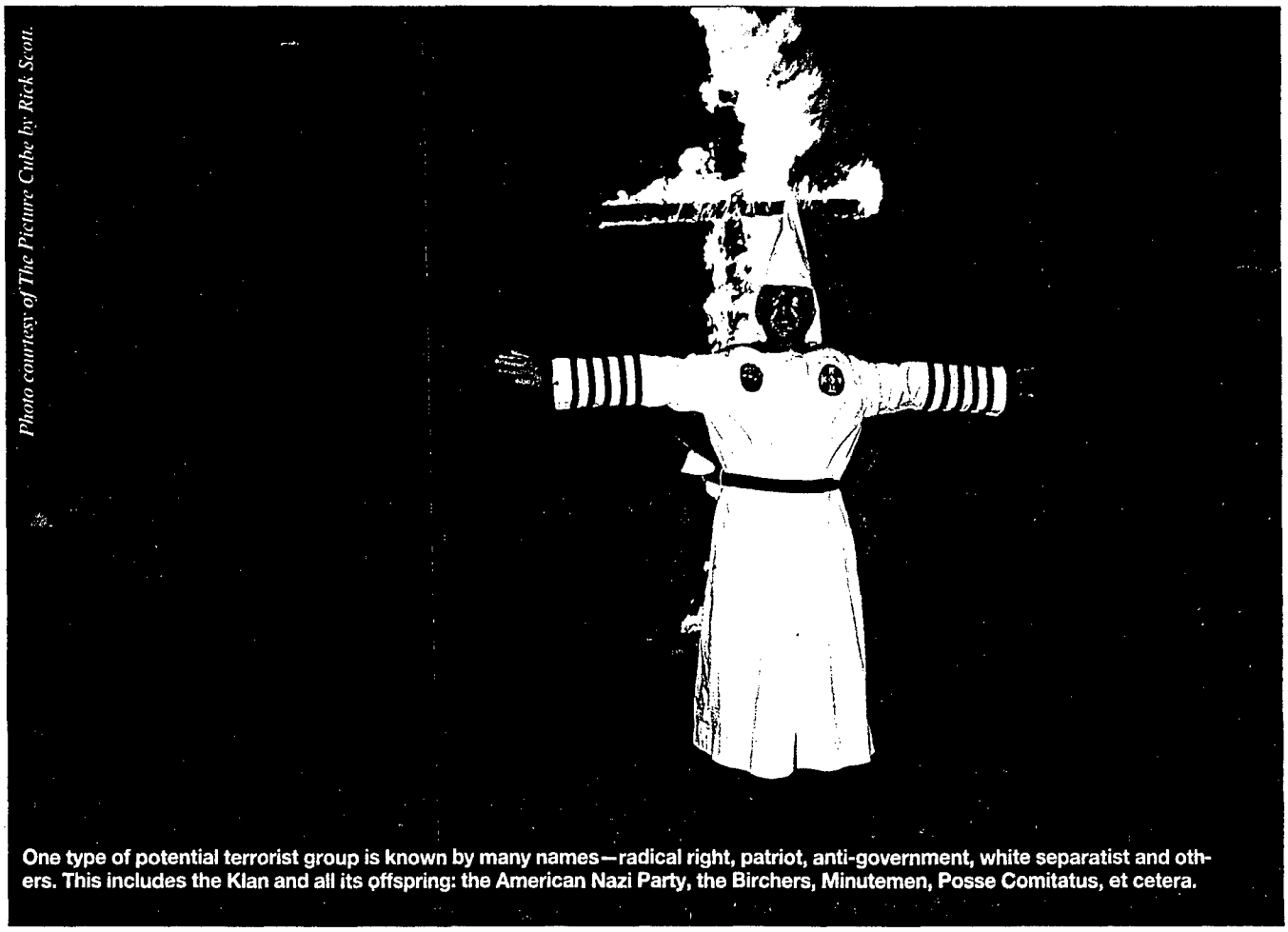
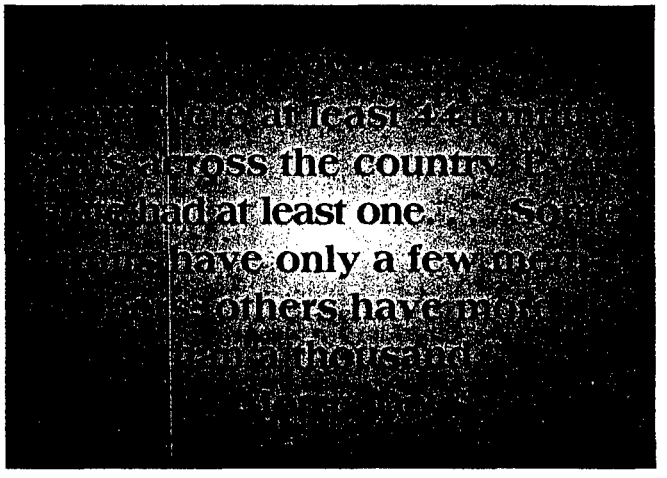


Photo courtesy of The Picture Cube by Rick Scott.

One type of potential terrorist group is known by many names—radical right, patriot, anti-government, white separatist and others. This includes the Klan and all its offspring: the American Nazi Party, the Birchers, Minutemen, Posse Comitatus, et cetera.

not include them in its annual report because the incidents don't meet the federal criteria. All of this is complicated by the fact that there is no such thing as terrorism in our criminal law. Bombers and assassins are not charged with terrorism, they are charged with the crimes they commit. So it's not clear how much value there is in all the semantic armwrestling to begin with, although federal legislation, including the new anti-terrorism bill, may provide some advantage in cases that fit the federal definition.

For the record, two terms that are often used interchangeably actually have different and specific meanings. According



to the RAND report and other authoritative sources, "anti-terrorism" refers to activities intended to prevent terrorist acts. "Counter-terrorism," on other hand, refers to activities that respond to terrorist acts once they have occurred. In other words, police intelligence operations and target-hardening measures are anti-terrorist; SWAT teams are counter-terrorist.

U.S. terrorist organizations

The RAND report identifies five potential types of terrorist organizations in the United States: ethnic separatist and emigre groups, left-wing radicals, issue-oriented groups, foreign terrorists and right-wing groups.

Historically, ethnic/emigre groups have been some of the most violent, although this has not been the case in recent years. These groups use the U.S. as a battleground for causes that may have little to do with domestic policies of the American government. They have been responsible for bombings in major American cities, and their activities often cluster in ethnic enclaves where radical attitudes are sometimes handed down to succeeding generations.

Left-wing radicals were most active during the Vietnam era and are less of a factor today, although some experts classify single-issue groups such as ultra-environmentalists and animal rights radicals as left-wing. In fact, there has been published supposition that the alleged "Unabomber" may have been influenced, at least in target selection, by exposure to

materials made available at an Earth First conference. Spokespersons for Earth First have denied that the suspect now in custody was a member of the group.

In addition to environmental and animal rights groups, the most prominent single-issue radical groups of interest are those responsible for anti-abortion violence that has included a series of clinic bombings and possible involvement in attacks on doctors. In many areas of the country these have been the groups of primary concern to date.

Until the bombing in Oklahoma City, foreign terrorist groups had been responsible for more actual damage than any other groups in recent history. Foreign terrorists were behind the World Trade Center bombing and a laundry list of planned bombing campaigns targeting New York City and Washington DC throughout the 1980s and early 1990s, as well as the Pan Am Flight 103 mass murder in Lockerbie, Scotland.

International terrorism resists analysis and prediction because any linkages of cause and effect that may come into play are often distant in time and place.

Experts originally theorized that the Pan Am 103 bombing was ordered by Iran in retaliation for the accidental downing of an Iranian airliner by a U.S. Navy ship on patrol in the Arabian Gulf months before. While there may have been a connection, investigators subsequently named two officers of the Libyan intelligence service as having supervised the actual operation.

Yu Kikumura, identified as a Japanese terrorist sent to the United States to launch a campaign of bombing in Manhattan in 1989, was allegedly acting under the orders of Colonel Qadaffi of Libya, in retaliation for a U.S. bombing mission against Libya two years before. The air raid on Libya, in turn, was in retaliation for Qadaffi's suspected involvement in the bombing of a German nightclub frequented by off-duty U.S. military personnel.

On the international scene, as the decades of Israeli-Palestinian violence suggest, cause and effect often blur in an endless series of strikes and counter-strikes in which all sides accuse their enemies of terrorism and claim the right of self defense.

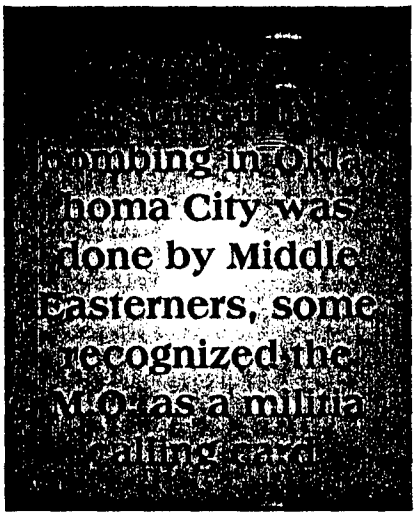
The fifth type of potential terrorist organization is known by many differ-



Photo courtesy of The Picture Cube by Frank Micelotta

April 19 has gained significance among some militia groups as a day of reckoning. The bombing of the Alfred P. Murrah federal building in Oklahoma City last year is thought to have been carefully planned for that date.

ent names — radical right, patriot, anti-government, white separatist, white supremacist, survivalist, tax resisters, etc. It is basically a collage of radical groups and individuals whose core members trace their genealogy to the Cold War. Since World War II, a looseknit family of groups on the far right has evolved across the country. From the taproot, the Klan and all its offspring, to the American Nazi Party,



the Birchers, Minutemen and later Posse Comitatus and others, these groups never constituted more than a radical fringe. And they spent more time and energy squabbling amongst themselves than pursuing a cogent agenda.

One of the few things many of them did share to some extent was Christian Identity, a racist, anti-semitic pseudo-religion based on a 19th century interpretation of Scripture that holds that Anglo-Saxons are the lost tribes of Israel. According to Christian Identity, modern Jews are literally descendants of Satan, and persons of color are non-human "mud people." Even with this in common, though, conflict continued over doctrinal minutiae among the various factions.

Right-wing radicals had high hopes of recruiting Midwest farmers hit hard by the farm crisis of the 1980s, but were largely disappointed. It wasn't until 1992 and 1993 that events created an atmosphere in which their message would find a broad audience.

The Randy Weaver standoff in August 1992 at Ruby Ridge, Idaho, in which Weaver's teenaged wife and son and a U.S. deputy marshal were killed, was a godsend for radical propagandists who cast the Weavers as martyrs in a holy war against ZOG, the "Zionist Occupation Government."

Organized fringe

Morris Dees is the founder and chief trial counsel for the Southern Poverty Law Center, home of the Klanwatch Project and Militia Task Force. In his book, "Gathering Storm - America's Militia Threat," he reports that in October 1992, 160 white men, a "true cross-section of the far-right movement" met in a hotel conference room in Estes Park, Colorado, for a weekend of speeches, strategic planning and committee work designed to organize the movement and expand its appeal. Two main themes were struck there, according to Dees. First, attendees were admonished to avoid blatantly racist and anti-semitic rhetoric and to focus on the federal government as the common enemy. Second, a strategy was forged based on 18th and 19th century militias and vigilantism, that would lead in the months to follow to what we now know as the militia movement.

TERRORISM IN AMERICA

Of that conference Dees writes, "During that weekend in the Rockies, a network of militant anti-government zealots was created. . . . The Rocky Mountain Rendezvous. . .was a watershed for the racist right."

The Branch Davidian stronghold near Waco went up in flames on April 19, 1993, after a 51-day standoff with the FBI. Nine Davidians escaped and more than 70 died, including as many as two dozen children. The Patriot movement was not alone in decrying the performance of federal agencies at Waco. In addition to critics in Congress and elsewhere, the National Rifle Association was especially harsh in its comments, and public opinion generally was mixed on the government's conduct. While the outcomes of the two stand-offs were unquestionably and tragically unacceptable, movement sympathizers rejected any suggestion that they were the results of honest miscalculations or even incompetence. They insisted that it was the evil intent of ZOG to make examples of the Weavers and the Davidians, and that April 19 was the moral equivalent of Pearl Harbor.

When Congress passed the Brady Bill later that year, the militia movement caught on like a brushfire. Again quoting Morris Dees, "Between 1994 and 1996, there were at least 441 militia units across the country. Every state had at least one. . . . Some units have only a few members; others have more than a thousand. In addition. . . 368 allied Patriot groups promoted the formation of militias."

In a letter to Janet Reno on October 24, 1994, Dees wrote, "Our office has confirmed the active involvement of a number of well-known white supremacists, Posse Comitatus, Identity Christian and other extremist leaders and groups in the growing militia movement."

According to most observers, there is a distinction to be made between rank and file militia members and long-time extremists. Average militia members tend to be lower to middle-income white men worried about economic security as well as government excesses and what they believe are their Second Amendment gun ownership rights. Long-time extremists appear to be encouraging the militia movement in furtherance of their own radical, and often violent, aims.

As related movements gained attention, the factions within began to form their own courts. They issued arrest warrants for government officials and filed bogus liens on anyone who drew their ire. Anti-government sentiment was fed through newsletters, computer bulletin boards and short-wave radio programs whose rhetoric grew increasingly heated and paranoid. The groups' delusions included believing that they were targeted for preemptive strikes, that Russian tanks were hidden on American military bases and that at any moment an order would be sent out to round up members and place them in concentration camps such as the one disguised as a new airport in Denver.

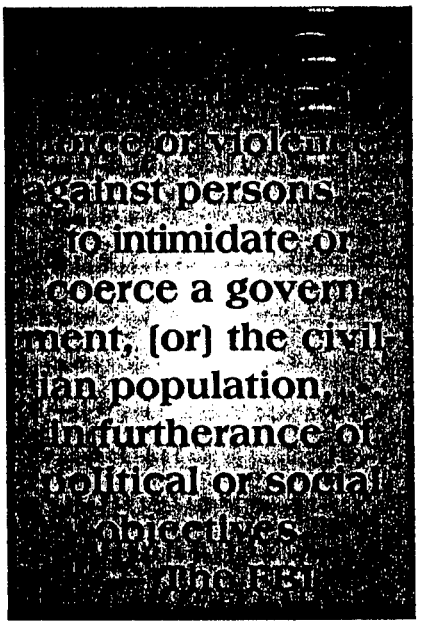
Amid the propaganda of hate, fear and paranoia, there were ample indications that April 19, 1995, would be a special day for the movement. The bulk of the March 1995 issue of the Militia of Montana's newsletter was devoted to the case of Richard Wayne Snell, a movement hero. Snell was



Photo by Tom Carter.

In addition to environmental and animal rights groups, the most prominent single-issue left-wing radical groups are those responsible for anti-abortion violence including clinic bombings and attacks on doctors. The murder of a Florida abortion doctor was not considered a terrorist act by the FBI because evidence of conspiracy was lacking.

scheduled to be executed on April 19 for the murders of a black Arkansas state trooper and a man Snell allegedly misidentified as a Jewish pawnbroker. The MOM newsletter linked the date of his pending execution to the dates of the Randy Weaver firefight, the British burning of Lexington in 1776, and the 1993 conflagration at Waco. An associate had reportedly threatened Snell's clemency board with the wrath of God



if Snell was executed. In other news, a group described as having "Identity leanings" announced an event to honor the Davidians and to protest Snell's execution at a Confederate memorial park in Arkansas on April 19. And of course ceremonies were planned at the Mount Carmel site near Waco as well.

And that is why a number of people around the country, Morris Dees and his associates included, didn't necessarily think first of Middle Eastern terrorists when they heard the news from Oklahoma City. That is why they suspected that the truth lay closer to home. After all, they had read "The Turner Diaries," a novel written in 1978 in which a fictional group called The Order begins an ultra-violent civil war in America with the destruction of FBI headquarters in Washington by a 5000-pound ammonium nitrate and fuel oil (ANFO) truck bomb. And those who have followed the movement know that more than 200,000 copies of "The Turner Diaries" have been sold at gun shows and movement meetings over the years. They know that it is a bible to many in the movement today, and that there are prophets aplenty crying out in the wilderness that the time has come to put their faith into action.

But what even the most knowledgeable observers don't know is whether Oklahoma City was an isolated incident or the Fort Sumter of America's second Civil War. ❑

Richard Abshire is a former police captain and SWAT commander, a graduate of FBI and U.S. Secret Service terrorism, hostage negotiations and dignitary protection schools. He is a regular contributor to this magazine.

Coming Next Month

Terrorism in America
Part Two: Today & Tomorrow

Where do we go from here? Which is the greater threat to America's future, international or domestic terrorism? What can law enforcement do about it, and what role will the new anti-terrorist law play? Find out what the experts think in the next issue of LET.

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World War I

Maxium &
Gatling Gun

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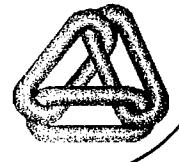
WWII

Somalia & Gulf Wars
1968-1992

MK19 Bursting
Munition

2000

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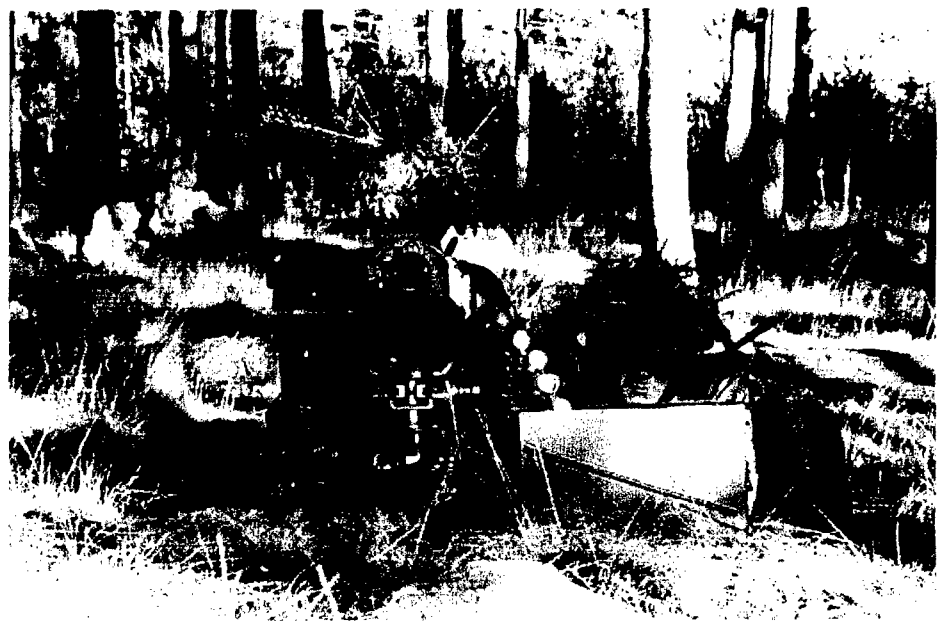
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BOFORS Fields **"3P"** Air-Burst 40mm Ammunition to Sweden 1993-1995

Alpha Protoype Development 1993-94

CDC Develops Initial LVS Brassboard 1991-1993

Gun Brass Board R&D 1990-1991

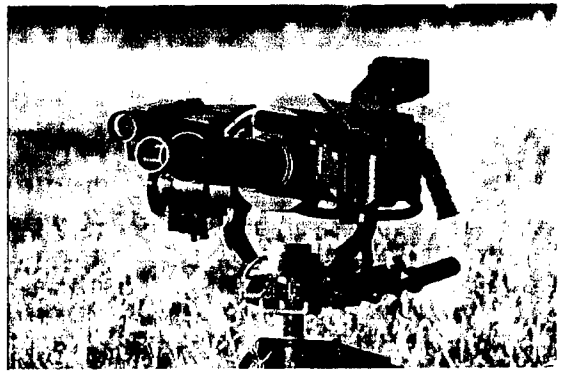
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Tested 1996

Gun-Sight-Ammunition
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Ready for IOT&E

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Verified 1997-1998

Customer Focus Groups
1996-1997 MANPRINT Focus

Beta Weapon Prototype
Development 1994-96

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Reliability

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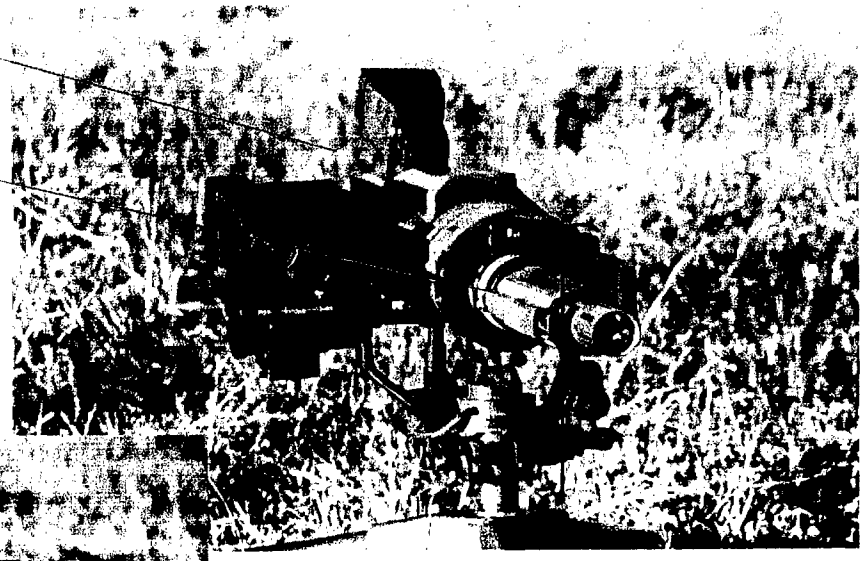
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Range Finder & Sensors

Ammunition Programming

Optimized Rate of Fire

Low Dispersion Weapon





Light, Low Recoil Weapon

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Soldier Display

Electronic Range Card

Adjusted Aim Point

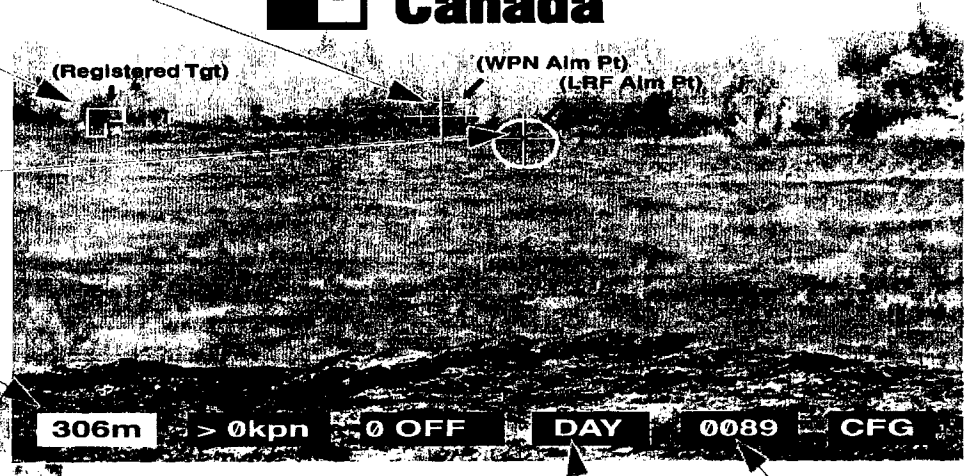
Predesignates Targets

Software

Laser Aim Pointer

Range





Day / Night

Azimuth

Soldier Controls

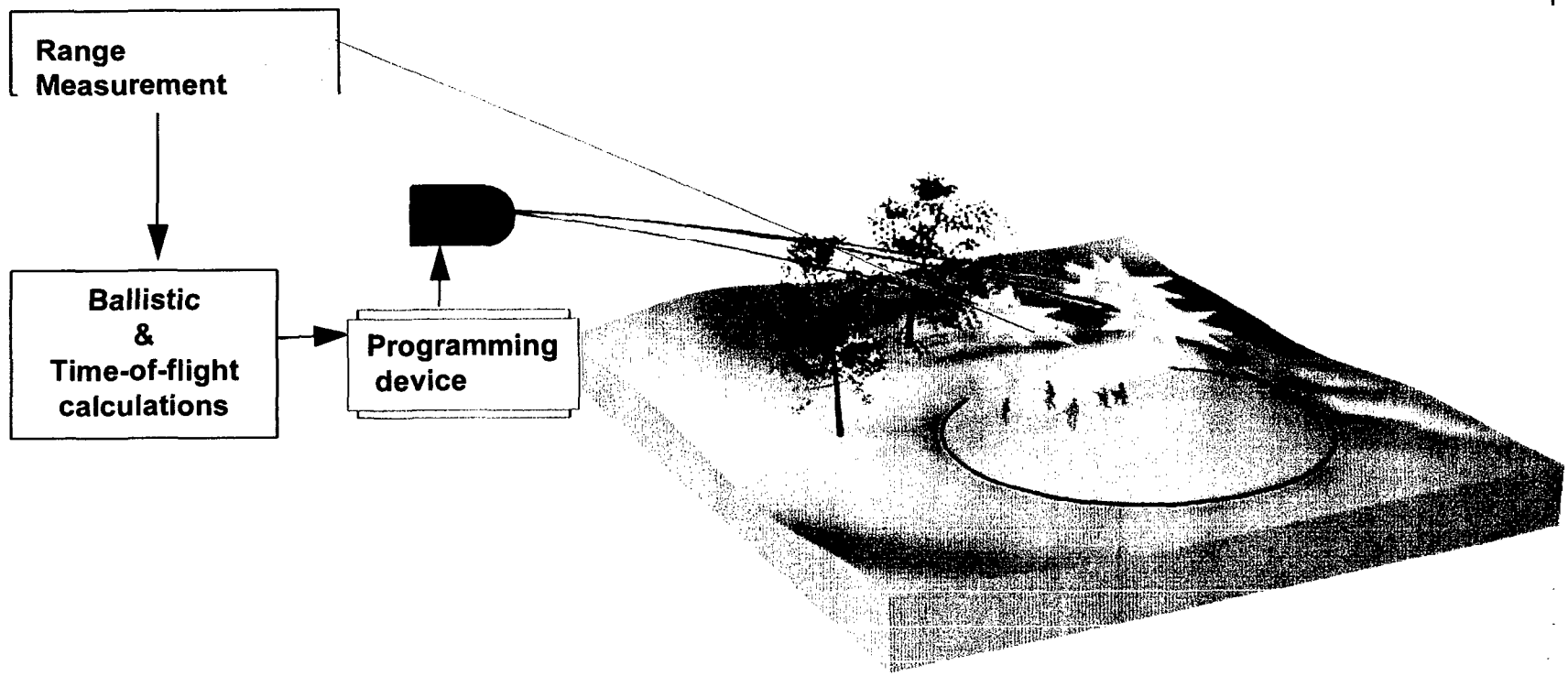
LRF Trigger
Weapon Trigger
Mouse (Toggle)

SacoDefense incorporated

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Principle of Air Bursting Ammunition

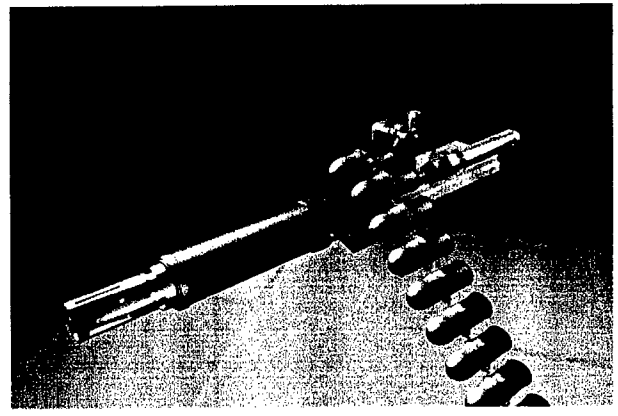


SacoDefense incorporated

BOFORS CARL GUSTAF
CELSIUS GROUP

Computing Devices Canada

Weapon Design



- **Stability & Low Weight**
  - Recoiling Mass / Total Gun Mass
  - Internal Hydraulic Soft Mount
- **Fires Current DOD and NATO Inventory Ammunition**
- **Built to fire new BOFORS "Programable" 40mm Ammunition**
- **Embedded Controls**
  - Built for "Soldiers"
- **8 Key Safety Features**
- **Closed Bolt Firing**
  - In Bore Fuzing
  - Lower dispersion



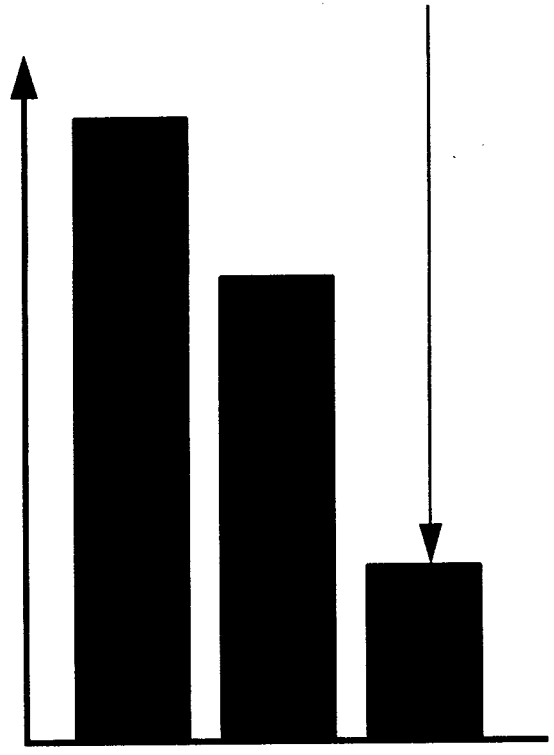
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Low Recoil Energy

* Low Recoil Energy = Easy Mounting on Mobility Platforms
* Lower Recoil Energy = Improved Accuracy





SacoDefense incorporated

BOFORS CARL GUSTAF CELSIUS GROUP

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Gun Facts

	STRIKER	MK19
Weight	37 lbs	76 lbs
Barrel Removed	31 lbs	
Rate of Fire	250-300 rpm	325-375 rpm
Length	34.6 in	44.29 in
Quick Detach Barrel	20 in	
Width	7.7 in	8.89
Heigth	7.7 in	8.19 in
Charge Pull	**55 lbs**	**99 lbs**
% Gun/Recoil Mass	55%	22%



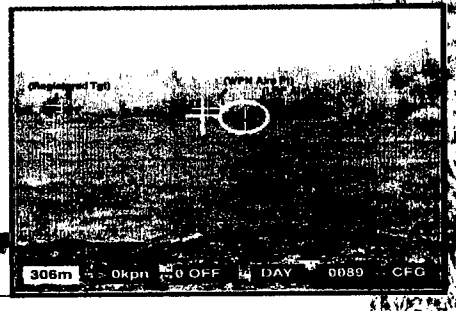
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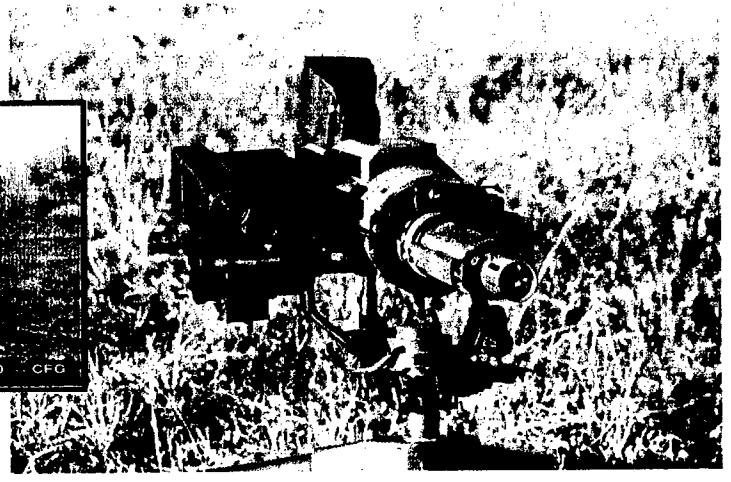
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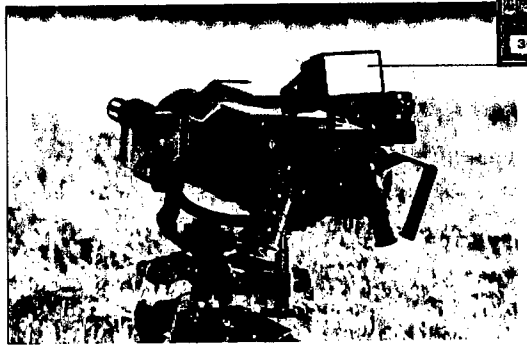
Computing Devices Canada

Video Sighting Basics

- Day/night camera + computer + display
- Synchronized Precision electronic mount
- Automatic Aimpoint offset
- Electronic Range Card
- Simplicity for Soldier
  - Laze
  - Aim
  - Shoot







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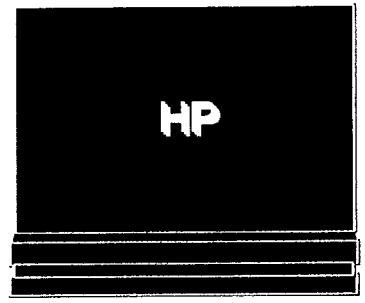
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CELSIUS GROUP

Computing Devices Canada

HP Round Features

■ Prefragmented	-	large footprint & high lethality
■ Time fuse	-	electronic, for air burst
■ Point Detonating	-	mechanical
■ Self Destruct	-	electronic
■ Safe & arm device	-	mechanical STANAG distances apply
■ Tracer	-	w/wo (IR Tracer Option)
■ Propulsion system	-	off the-shelf highly accurate - low muzzle velocity dispersion
■ Ballistics	-	compatible with M430
■ HEDP Version	- +	penetration> M430 behind armour effect





Multi Spectral Screening "Smoke"

- Will use BOFORS Fuze
- MultSpectral Screen
- Air Burst = Good Screen Material Dispersion
- Other

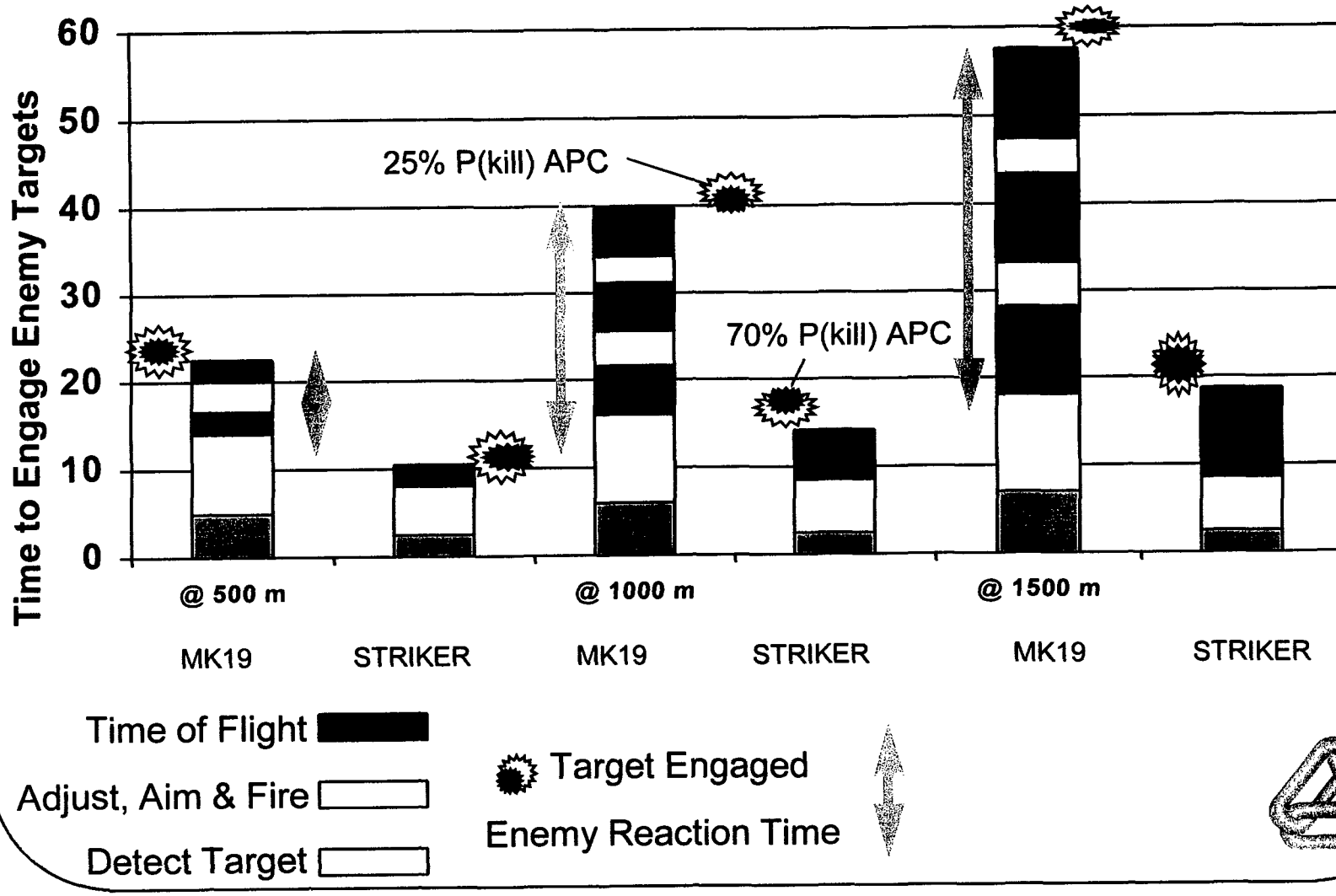
The HP round leverages "3P" Fuse Technology

SacoDefense incorporated

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First Burst Destruction

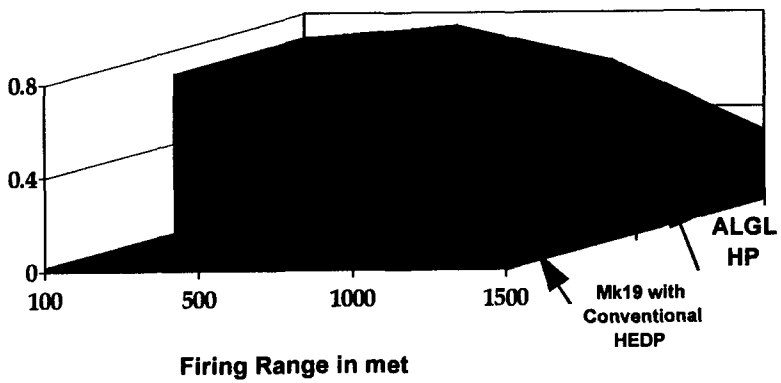


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System comparison $P_{incapacitation/hit}$

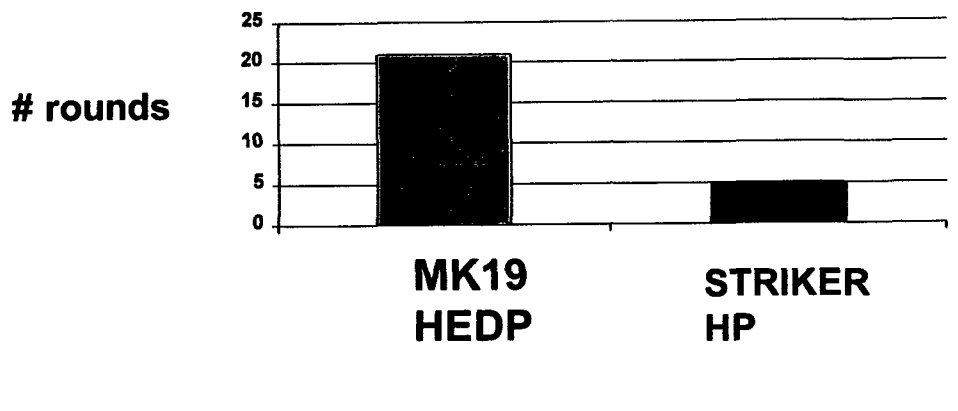


5 Round Burst

Target 10 Standing Soldiers (10 x 20m) area

$P_{incapacitation/hit}$

Mission cost



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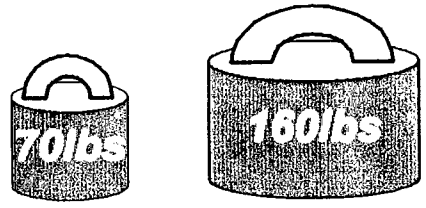
Weapon Pay-off

Simplicity

Smart Technology

+ Precision

More Firepower with Lighter Loads





More Mission Capability

More Stowage for Fuel, Water, Food

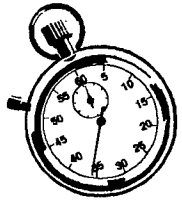
Effective Destruction of Enemy

Better Survivability

= 75% less ammo/mission

= 60% less gun weight

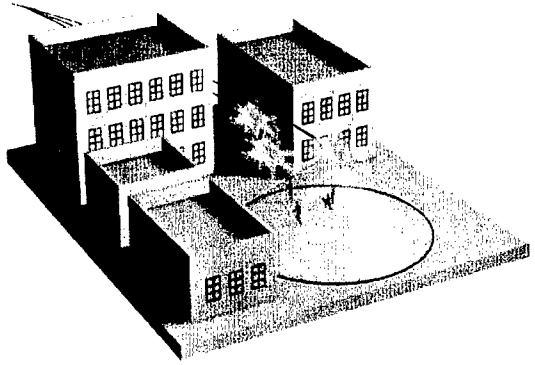
= 1000% Operational Improvement



More Engagements / minute

Lower Costs





SacoDefense incorporated

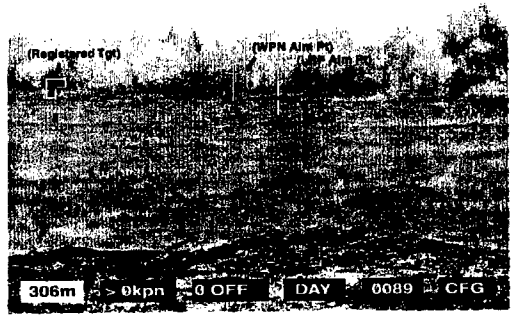
BOFORS CARL GUSTAF
CELSIUS GROUP

Computing Devices Canada

Advanced Weapon & Fire-Control Technology

- **Gun Technology**
  - Lightweight
  - Ready Soldier Controls
  - Recoil Reductions
  - Embedded Fuzing
- **Fire Control**
  - Aids Target Detection
  - Adjusted Aim Point
  - Sets Fuze





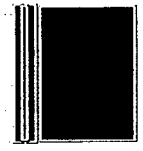
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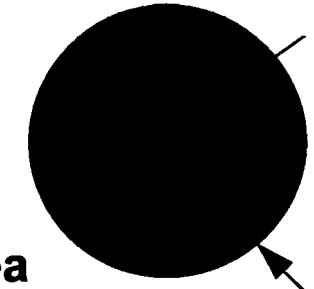
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Air-Bursting Fuse Technology



Low Dispersion Propulsion System

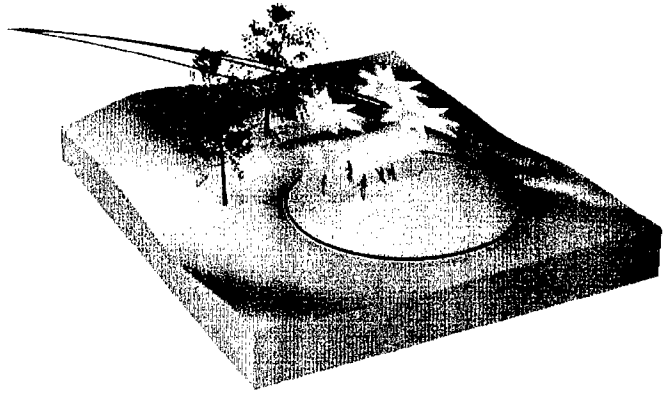


Conv. HEDP

HP Air Burst Footprint

Lethality Area of one round

8 vs 100 m^2



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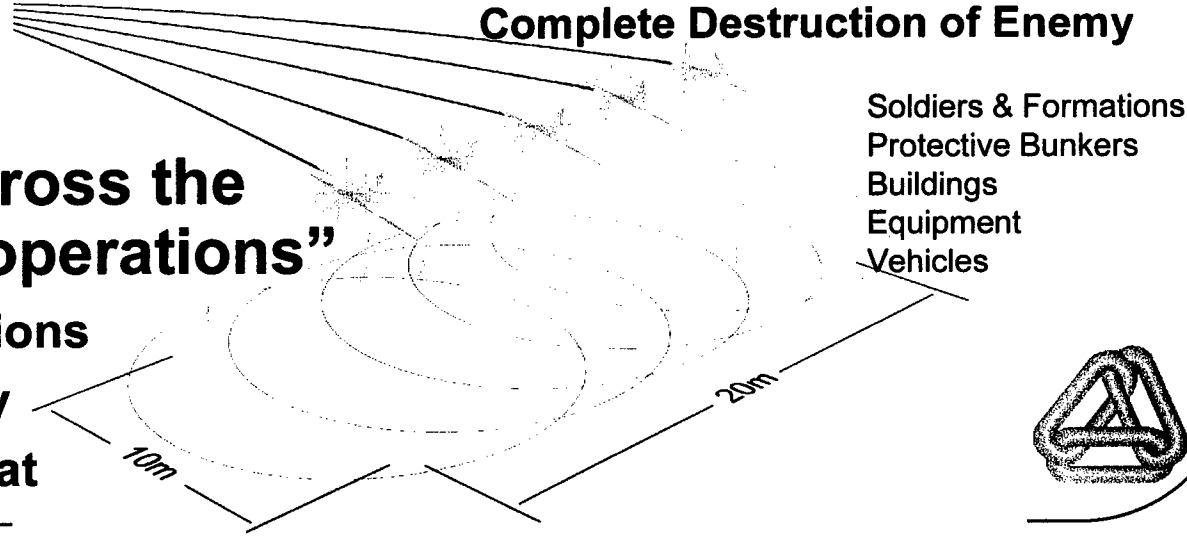
Computing Devices Canada

Weapon Missions

- **Firepower for light & mobile units**
- **Protection of Critical Personnel and Mobility Assets**



Complete Destruction of Enemy



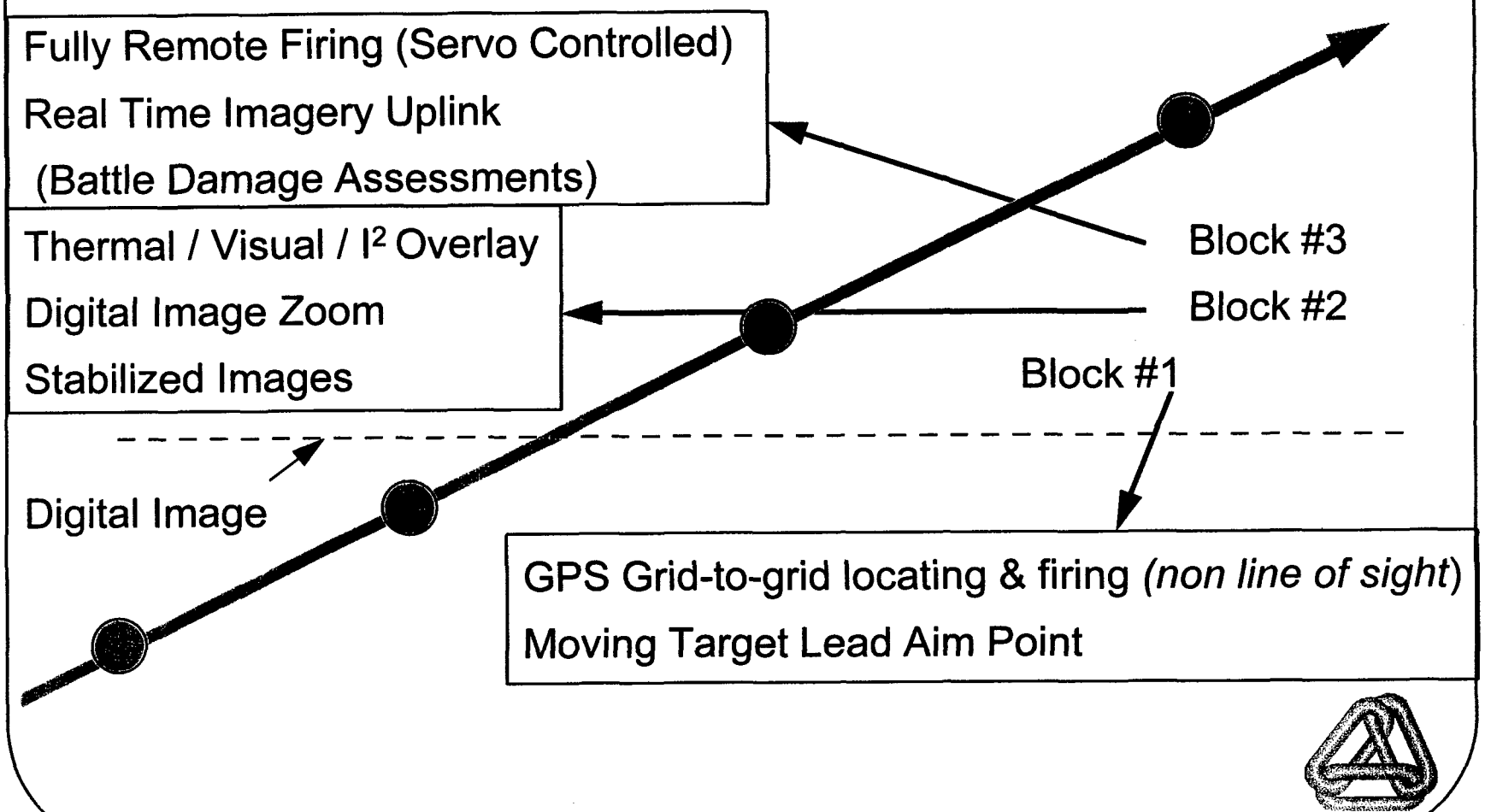
- **Effective across the "spectrum of operations"**
  - **Special Missions**
  - **Low Intensity**
  - **Heavy Combat**

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Technological Growth



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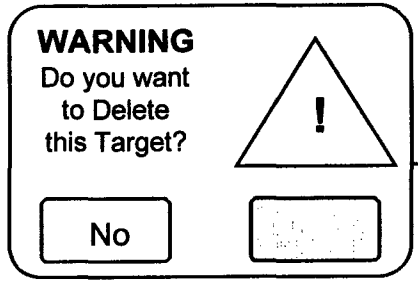
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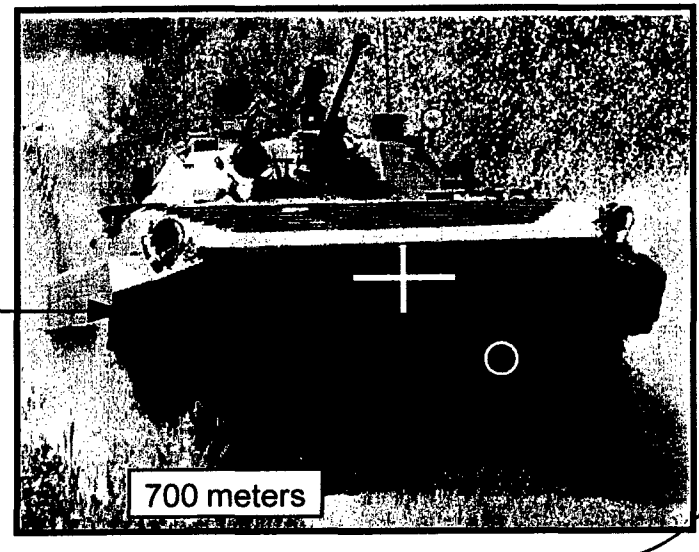
Summary

- **Significant Industry Team Investment**
- **3 New Technologies Vastly Enhance**
  - Lethality & Effectiveness
  - Friendly Survivability
  - Target Detection Capability
  - Mission Capability
  - Mission Flexibility

STRIKER 40mm

Smart Weaponry for Warriors





DIRECTIONAL INFRARED COUNTERMEASURES - SYSTEM TRADEOFFS

Paul Lang
Dr. Edward Rippert
Dr. Gerald Griffith

Northrop Grumman Corporation
600 Hicks Road,
Rolling Meadows, IL 60008

1. Introduction

In the last ten years infrared (IR) heat-seeking missiles have accounted for the loss of more aircraft than any other battlefield weapon. Currently deployed IR countermeasures (IRCM) systems include flares and active on-board jammers. The deployed active on-board IRCM systems consist of broad-beam jammers. Second and third generation IR missiles have now been deployed with flare rejection circuitry and are less susceptible to IR jamming. Jamming these threats requires higher jamming signal levels that must be projected at all azimuth aspects around the aircraft. Due to these factors, broad-beam IRCM is no longer practical. These factors are the impetus for the development of directive IRCM (DIRCM). A DIRCM system uses a narrow, high-intensity jamming beam that is pointed at the incoming threat.

In comparison to the older, broad-beam IRCM systems, a DIRCM system is much more complex. A DIRCM system must perform the following functions that were not performed in a broad-beam system:

- Detect a missile engaging the aircraft
- Handoff to a fine track sensor
- Track the missile in a clutter background
- Direct a narrow-beam jamming source at the missile.

At the same time as weapon technology advanced, the political environment changed with the fall of the Berlin Wall. As a result, defense budgets were cut, and a new set of priorities emerged from the user environment. No longer were electronic warfare systems developed solely for one platform, thus commonality became a high priority. Upgradeabililty also became important as the end users realized that systems were going to be kept for longer periods of time and threats were going to continue to evolve.

The purpose of this paper is to look at some of the design tradeoffs that are performed when designing a DIRCM system. These design tradeoffs will be illustrated by examining several different hardware implementations of a DIRCM system and how effectively each meets the overall system requirements. Recommendations will be made for the selection of certain hardware approaches to maximize the performance of a DIRCM system.

2. System Design Process

As with any engineered system, the overall system engineering process is crucial to development of a DIRCM system. The design of a DIRCM system must be an iterative process due to the system complexity. We break the general design process down into four main activities:

- Requirements Analysis
- Functional Allocation
- Synthesis/Design
- Technical Assessment and Control

Figure 1 graphically illustrates the relationship between these activities. The main thrust of this paper is a detailed discussion of the synthesis/design of several key DIRCM components. Requirements Analysis, and Functional Allocation will only be covered in enough detail to support the Synthesis/Design discussions. Technical Assessment and Control, as shown in Figure 1, is an integral part of the other three system design components and will not be discussed separately. We begin with an overview of the requirements analysis pertinent to the synthesis/design components discussed in this paper.

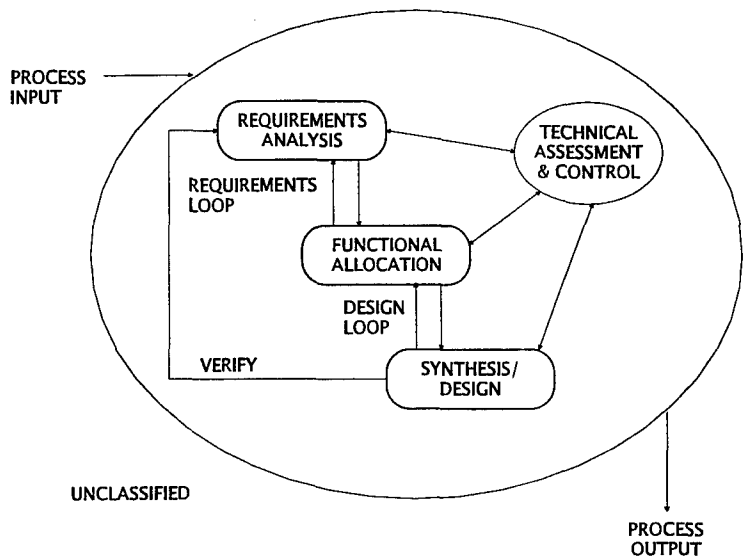


Figure 1: Iterative System Engineering Process

3. Requirements Analysis

The first step in the system design process is requirements analysis. The analysis is conducted iteratively with Functional Allocation and Synthesis/Design in order to refine the requirements as the system definition becomes more detailed. Requirements stated/mandated by the customer are the basis for all other requirements. These requirements can be quite general (for example, a 94% survivability goal for an aircraft against all IR missile attacks) or fairly specific - such as a requiring a minimum jamming signal to aircraft signature ratio (J/S) $\geq$ 10. Specific customer mandated requirements stem from an a priori knowledge of successful IRCM system requirements.

In order to more clearly assess the system definition, we define five basic types of requirements:

- Functional/Operational requirements
- Performance requirements
- Adaptability requirements
- Constraint requirements
- Availability (ARM) requirements

Functional/Operational requirements describe the tasks a system must perform, general system characteristics necessary for this performance and operating conditions such as normal aircraft mission profile. Performance requirements define what the technical capabilities and parameters of the system must be in order to achieve a specified level of performance (e.g., J/S $\geq$ X). Adaptability requirements define the systems' ability to accommodate new or changing requirements such as the incorporation of alternate jamming sources. Constraint requirements describe mandated factors that limit the design, such as how much power is available from the aircraft. ARM requirements address the ability of the system to perform its required tasks over time without failure and the serviceability of the system. For the purposes of this paper we will

discuss some of the basic DIRCM requirements relating to three of these categories: Functional/Operational, Performance and Constraint.

3.1 Functional/Operational Requirements

An IRCM system of any kind has one overall requirement: defeat an IR missile threat. For a DIRCM system in particular we can break this overall requirement into four basic functional requirements:

- Acquire the missile threat
- Track the approaching missile
- Direct countermeasure energy at the missile
- Defeat the missile threat.

3.2 Performance Requirements

One of the key performance criteria for any system is how well it must work. The customer understands that it is usually not practical to design a system to be 100% effective and meet the rest of the system constraint requirements such as cost, weight and power. Typically the customer defines a level of survivability or protection that the system must be designed to, such as defeating 94% of the threats. The survivability requirement has profound impact on the design of the system.

General system performance requirements such as this are usually broken down into more specific allocated requirements to a specific set of hardware subsystems. More specific derived requirements are then produced for the hardware subsystems based upon the allocated requirements. We will show in section 4 how an overall system performance probability requirement such as this can be broken into a set of allocated, derived requirements. An analysis of these derived requirements in relation to cost and risk of the final product will reveal whether the overall goal is practical.

3.3 Constraint Requirements

An IRCM system must have a minimal impact on aircraft performance. When this requirement is combined with an emphasis on commonality, such that the system can be installed on more than one aircraft, several key constraint requirements are derived. Some of these constraint requirements include system weight, power and size. Less obvious is a requirement for installation orientation. This requirement flows from that fact that a DIRCM system will typically be installed in an aircraft already designed and in service. The system line replaceable units (LRUs) must be capable of being mounted in whatever installation space is available. When more than one space is available, the guiding principle is to select an installation that provides the optimum unobscured field of regard (FOR) for the DIRCM subassemblies. If a DIRCM hardware design had an orientation limitation, it would significantly curtail its commonality to multiple platforms.

4. Functional Allocation

Once we have identified the functional requirements, we can begin to allocate these requirements among various subsystems by postulating various point-design approaches. It is important to remember that this is an iterative process. Functional allocation begins with the four functional requirements outlined in section 3.1. An overall system performance requirement must be allocated to these functional requirements. As an example, we will use a customer defined survivability requirement of 94% to illustrate an example of functional allocation and its interrelation with requirements analysis and synthesis/design.

4.1 Number of Components

First of all, our requirements analysis has pointed out four main functions the system must perform when defeating the threat. We must also take into account the availability of the system when computing the probability of defeating a threat. Therefore, the system performance requirement must be allocated among

five functions instead of four. Each of the system functions is necessary and independent. Therefore the overall system performance probability is the product of probability of each function working correctly[1]. In the first iteration of synthesis/design we find that it may be necessary - under cost, risk and adaptability requirements - to allocate the acquisition and tracking functions into a missile warning system (MWS) and a higher resolution fine-track sensor (FTS), respectively. In the second iteration of requirements analysis, we note that this new system configuration option requires a new functional/operational requirement: handover of the threat from the MWS to the FTS. Furthermore, we can foresee that other system configuration options may require even more functions.

We can allocate an individual function performance probability requirement from the system performance requirement if we assume that all components have an equal probability requirement. During subsequent iterations of the design process, the performance level of an individual function may be traded off in order to achieve the overall system performance, but equal performance is a reasonable assumption for the first few iterations.

The required performance probability of each function (P_{comp}), under the assumption that all components have equal performance, will be:

$$P_{comp}(N_{comp}, P_{sys}) = \sqrt[N_{comp}]{P_{sys}} \quad (1)$$

where N_{comp} is the number of functions and P_{sys} is the desired system performance (or survivability).

In order to take into account the reliability of the missile without any countermeasures we can introduce the effective system performance (P_{sys_eff}),

$$P_{sys\_eff}(P_{missile}) = 1 - \frac{1 - P_{sys}}{P_{missile}} \quad (2)$$

where $P_{missile}$ is the reliability of the missile.

Using the effective system performance from equation 2 in equation 1, we can calculate the required function performance for a given number of functions, system survivability and missile reliability. Figure 2 shows plots of the function performance required for different numbers of functions at 100% and 75% missile reliability and a 94% system survivability.

We note from Figure 2 that each function can have a lower performance when there are fewer functions the system must perform. As part of the synthesis/design process, the system designer tries to minimize the number of independent functions the system must perform to keep the functional probability requirements at a practical level. However, Figure 2 also illustrates that even for the six DIRCM functions, the probability requirements for an individual function are 98.6%. If the hardware that performs these functions has some random performance variables associated with its performance, it must be designed to operate correctly under 3 sigma variation conditions[2].

---

[1] One could argue that these function will not necessarily be independent. For example, a long-range threat that is difficult for the MWS to detect will also be difficult for the system to track. However, if the system functions have a high-performance probability requirement, there will be a smaller chance that the system functions are related.

[2] The actual design point is slightly less than 3 sigma and depends upon whether the distribution is one or two dimensional. For the sake of simplicity, we will use a design goal of 3 sigma in this paper.

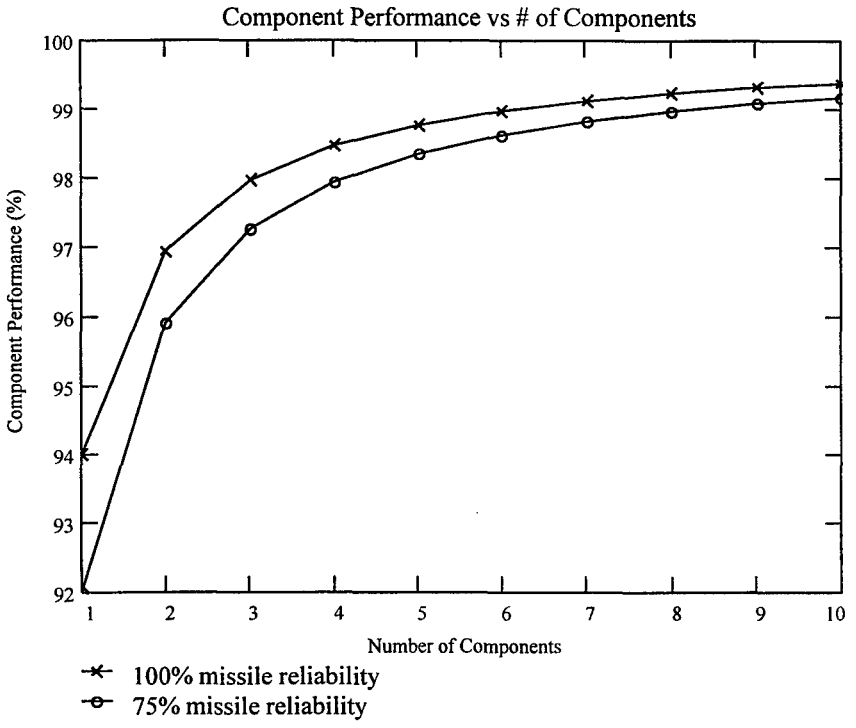


Figure 2: Required function performance versus the number of functions in order to achieve a 94% system survivability.

We note that the 98.6% example component performance is ambitious but achievable. This requirement will be a primary driver in the functional allocation of subsystem requirements and hardware selection. We can identify some general requirements of the system, based on the high performance requirements noted, that will be pertinent in subsystem functional allocation.

- The system must be able to acquire and track missile threats at their maximum range.
- The system must be able to track missiles in their post burnout (PBO) stage.
- The system must be able to acquire and track missiles launched from almost every angle for which the threat is capable.
- The system must have a rapid response time to counter short shots.
- The system must not experience reduced performance under conditions of normal and extreme own ship motions.
- The system must be capable of pointing narrow jamming beams/laser sources under normal and extreme vibration environments.

4.2 Subsystem Definition

The basic functional requirements can now be allocated to hardware-specific subsystems. This functional allocation is illustrated in Table 1. This functional allocation is straightforward but not unique. In this allocation, missile acquisition and missile tracking have been allocated to two subsystems, an MWS and an FTS. One could propose to allocate these functions to one hardware subsystem such as a large field of regard, high angular accuracy MWS. However, a large field of regard and high angular accuracy is difficult to achieve in one sensor. With this initial allocation process, more specific hardware requirements can be derived.

Table 1. Hardware Allocation of Key Functional Requirements

FUNCTIONAL REQUIREMENT	HARDWARE ALLOCATION
Acquire the missile threat	MWS
Handoff from the MWS to the FTS	MWS/FTS/and Pointing System
Track the missile	FTS
Direct countermeasures at the threat	Pointing System
Defeat the threat	Jamming Source

4.2.1 MWS Requirement Flowdown

The first step in the operation of a DIRCM system, as pointed out in section 3.1, is to acquire any IR missile threats to the aircraft. This is the primary role of the MWS subsystem. Some of the critical parameters of an MWS subsystem are:

- Field of regard (FOR)
- Angle of Arrival (AOA) accuracy
- Resolution
- Update rate
- Sensitivity
- Warning Time
- False Alarm Rate.

During the normal system engineering process, the requirements above are more fully defined based upon the overall functional requirement of detecting 98.6% of the threats. For the purposes of this paper, we will discuss only two requirements - the AOA accuracy and the system resolution.

The AOA accuracy defines the accuracy with which a threat can be located in the MWS FOR. The resolution defines the minimum angular separation between two sources necessary for the system to distinguish them. Figure 3 gives a graphical definition of AOA accuracy and resolution. Obviously, if an MWS has better resolution, it will be able to detect threats better in a high clutter environment. A more accurate MWS will allow other components of the DIRCM system to have more tolerance in their design. We will not derive a fixed requirement for the MWS AOA accuracy and resolution at this point since a DIRCM system can be designed to accommodate various MWS AOA accuracies and resolutions. As will be shown in Section 5, there is a direct relationship between MWS accuracy and resolution and the FTS field of view through the handoff requirement.

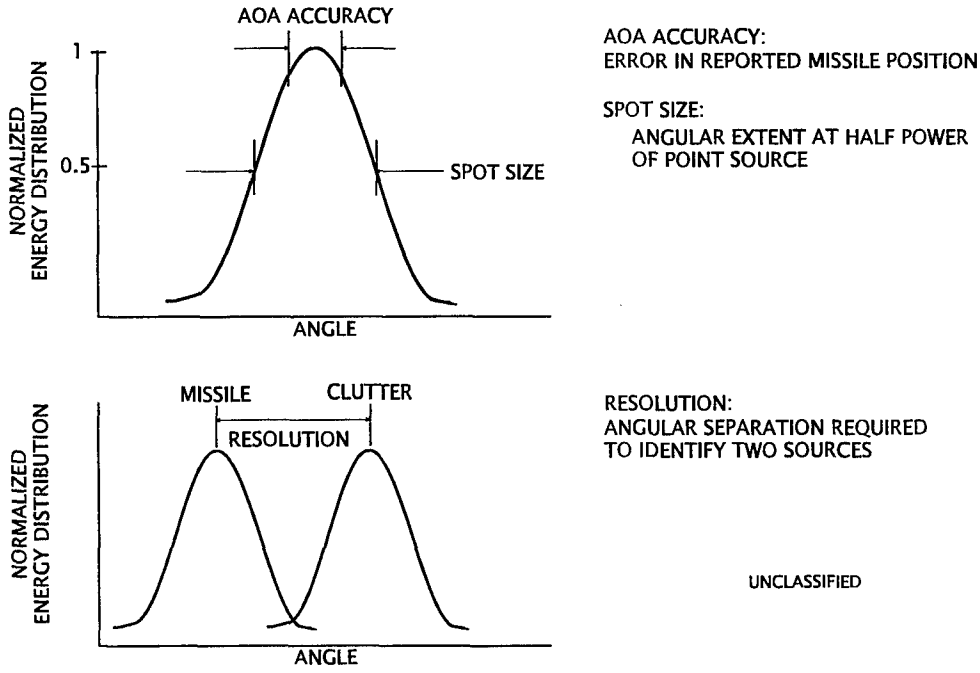


Figure 3: AOA accuracy and resolution definitions.

4.2.2 FTS Requirement Flowdown

In order to effectively track a missile and apply jamming energy on the threat, a DIRCM system requires accurate, high resolution information about the threat's position, updated at a high rate. The critical parameters of an FTS subsystem are the similar to those of the MWS sensor:

- Field of View
- Angular track accuracy
- Resolution
- Update rate
- Sensitivity
- Spectral region of operation

This paper will not derive specific requirements for the FTS but will instead try to show how the requirements for the FTS and the MWS interact and must be traded off in the synthesis/design process. However, some general comments can be made about the FTS requirements. The FOV of the FTS needs to be kept as small as possible. A smaller FTS FOV will increase the tracking accuracy, resolution and sensitivity. Each of these features will enhance system performance, improve the tracking probability of long range threats, and make the system easier to upgrade to point new sources.

In general, the FTS tracking accuracy requirement will be determined by the pointing requirements of the system. Typical laser beamwidths are on the order of a few milliradians. These laser beams must be pointed with an accuracy of 1/4 to 1/8 of the beamwidth to maintain a high J/S during the missile engagement. To achieve this pointing accuracy, the track accuracy of the system needs to be approximately 1/5 to 1/10 of the pointing accuracy. Thus the track accuracy will need to be approximately 1/20 to 1/80 of the laser beamwidth. The update rate of the FTS will also have a strong impact on how well the system points due to the large line of sight rates and accelerations encountered when tracking a missile.

4.2.3 Pointing Subsystem Flowdown

Fundamental to any DIRCM system is the pointing subsystem. The central premise of directional countermeasures is the ability to provide greater jamming energy on the threat through the use of a directional

beam that is actively pointed at the threat. The capabilities of the pointing subsystem, therefore, are crucial to the ability of the system as a whole to meet its performance requirements. The critical parameters of a pointing subsystem are:

- FOR
- Slew and Settle Time
- Pointing Accuracy
- Stabilization

The overall system FOR requirement may be met with one or more pointing subsystems. From the standpoint of cost and multiplatform capability, a larger pointing subsystem FOR is preferable. A large subsystem FOR reduces the need for multiple pointing systems on a platform in order to meet the overall platform's FOR requirements. This is particularly important since the pointing system will be one of the most costly DIRCM components. Since the pointing system must cope with variations in mounting positions, platform ownship motion and attitude as well as obscuration by various aircraft parts, it will generally need an intrinsic (neglecting obscurations from the aircraft) FOR greater than a hemisphere. The pointing accuracy and stability requirements must be sufficient over this FOR to point a narrow laser beam with a beam width of a few milliradians in the presence of platform ownship motion and vibration.

4.2.4 Jamming Source Subsystem Flowdown

The jamming source provides the optical IR energy to the pointing system to jam the threat. This IR energy is modulated in a waveform designed to defeat one or a variety of threats. Narrow lamp beams provide all band coverage of the various missile operating bands. Laser jamming sources typically operate at one threat waveband; however, solid state lasers have been developed to operate over all three major IR missile bands. The critical performance parameters for the jamming source are:

- Peak and average radiant intensity
- Beamwidth
- Spectral coverage
- Modulation flexibility
- Depth of modulation
- Sustained jamming time
- Source life.

5. Synthesis/Design

Now that we have discussed the requirements for the key subsystems, we can consider the tradeoffs involved in choosing various hardware approaches to implement these requirements.

5.1 Design Philosophy

First of all, the overall philosophy of the hardware tradeoff decision making process should be decided upon. There are two basic philosophies that will be appropriate under different circumstances. The first philosophy is low risk. A low-risk philosophy may be mandated by the customer. This philosophy is appropriate when production hardware is being designed to meet a hard delivery schedule and tight cost containment is a high priority. Low-risk hardware tradeoff decisions will favor a conservative approach. The second philosophy is high capability. Although risk reduction should always be an important goal, a system with a long delivery schedule and less cost containment constraints may be better served by allowing some riskier design decisions and technologies to be incorporated. For this paper we will utilize a low-risk design philosophy that examines tradeoffs using low-risk, proven technology.

5.2 Hardware Tradeoffs

We will now discuss some of the hardware-related tradeoffs that must be addressed in order to achieve the allocated requirements for the MWS, FTS, pointing and jamming source subsystems.

5.2.1 MWS Hardware Tradeoffs

MWS technologies can be either active or passive. Active systems such as radar are attractive for their ability to locate and track an incoming missile independent of the missile's emanations. Their primary disadvantages are that they are radiation emitters themselves and they have poor AOA accuracy. Because of their emissions and AOA accuracy, active systems are not candidates for the MWS. We propose here three MWS design approaches and tradeoffs and how each type will impact the FTS FOV requirement. Each of these systems is low risk and readily deployable and with proper design each can meet the basic MWS requirements. The three postulated designs are:

- Low resolution EO
- High resolution, high accuracy EO
- Scanning IR sensor.

EO sensors have the advantage that they are relatively small, light and do not require cooling. Their main disadvantage is that EO sensors utilize ultraviolet radiation which is scattered strongly by the atmosphere limiting AOA accuracy to a fraction of a degree. EO sensor performance can also be reduced by atmospheric ozone effects that do not limit the missile performance. Several EO MWS sensors have been deployed and the technology can now be considered relatively mature. The low resolution EO design approach utilizes a small detector array and achieves its AOA accuracy by blurring the image spot on the array and centroiding to find the pixel center. This blurring approach improves AOA accuracy; however, sensitivity and resolution are reduced. The high resolution EO MWS utilizes a higher resolution detector array and therefore has a higher acquisition cost and requires more processing than the low resolution EO sensor.

IR radiation is not scattered as strongly as ultraviolet radiation, and therefore IR sensors can have better AOA accuracy and relatively good performance in most atmospheric conditions. They operate in the same wavebands as the missiles so when the IR MWS performance is hindered by weather, the missile performance will also be hindered. Their primary disadvantage is that they require cooling to achieve high sensitivity. The cooling system must generally be mechanical, which impacts the reliability of the system. In addition, the cool down time of the sensor adversely impacts the system readiness. There are also greater clutter problems in the infrared when compared to the EO MWS. The IR sensor proposed here is based upon a scanning linear detector array similar to many common IR search and track systems (IRST). A drawback of this system is the low update rate on threat position since the system is scanning.

Nominal characteristics of each type of sensor are listed in Table 2 based upon engineering estimates. As shown in this table, the primary advantage of the low resolution EO sensor is cost - due to reduced detector resolution and processing power. The primary advantage of the high resolution EO sensor is obviously its accuracy and resolution. The advantage of the IR sensor is detection range and insensitivity to many environmental conditions as well as excellent resolution and accuracy.

Table 2. Characteristics of Proposed MWS Approaches

DESIGN PERFORMANCE CONSIDERATION	LOW RESOLUTION EO	HIGH RESOLUTION EO	SCANNING IR
Detection Sensitivity	Fair - will require large optics	Good	Excellent - Insensitive to Environment
Nominal AOA Accuracy	Medium	Fine	Extra Fine
Nominal Resolution	Poor	Fair	Good
Update Rate	Medium	High	Low
Initial Acquisition Cost	Low	Medium	Medium
Life Cycle Cost	Low - no moving parts	Low - no moving parts	High - Cooling Required

We will now consider how the MWS sensor's parameters effect the FTS FOV. Figure 4 defines the FTS FOV requirement given the MWS AOA accuracy and resolution in the presence of an unresolved clutter source. Assuming the clutter source separation from the missile is a uniform random variable from the coincident location (no separation) to the resolution of the MWS sensor, we see that the average error magnitude will be $\Delta/4$ where Δ is the resolution of the sensor. Thus the FTS FOV requirement will be proportional to: $2*(\Delta/4)$. Figure 4 also shows that the FTS FOV requirement is proportional to approximately six times the MWS AOA accuracy. A factor of three occurs since the AOA accuracy is usually reported as an RMS error and we must design the system to work at the 3 sigma point and a factor of 2 occurs due to the fact that we do not know the direction of the error.

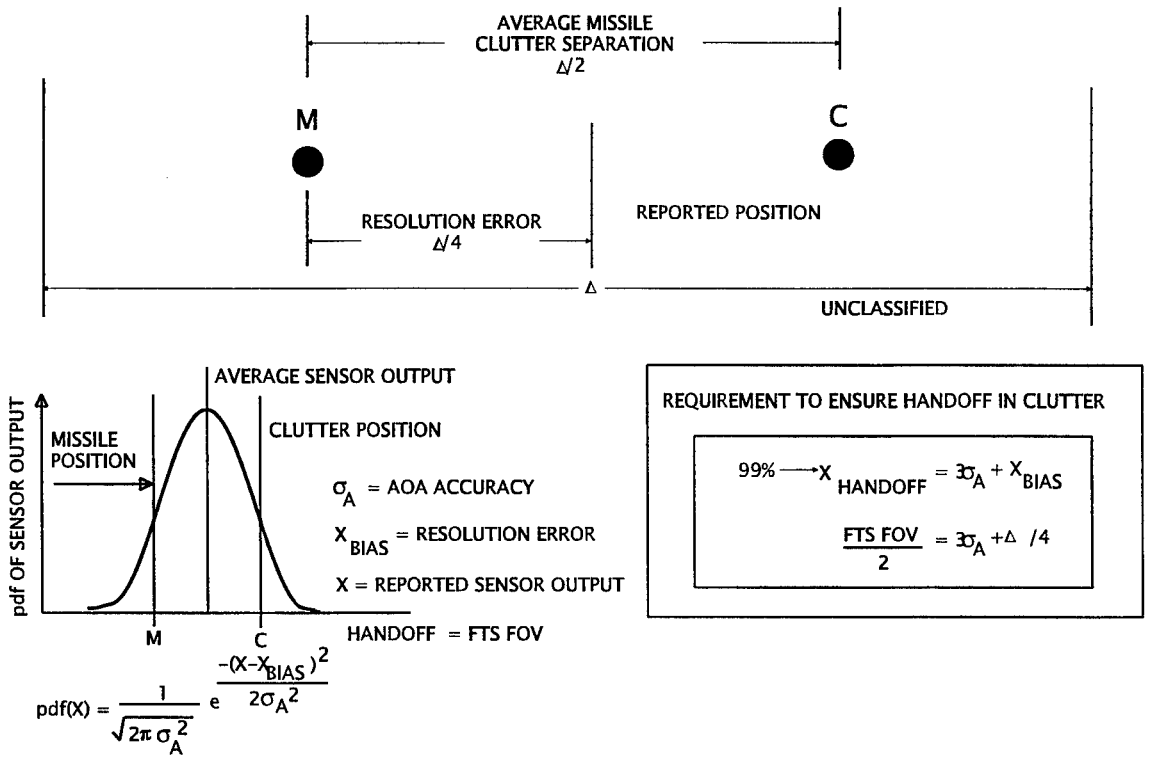


Figure 4: FTS FOV defined in terms of MWS AOA accuracy and resolution for a situation that includes an unresolved clutter source.

Other factors must be considered when calculating the FTS FOV to achieve greater than a 98.6% handoff probability. These other factors include parallax errors caused by the MWS and the FTS being displaced on the aircraft, latency caused by the MWS update rate and missile motions, and static misalignments. Table 3 presents the major sources contributors to the FTS FOV handoff error budget and an estimate of the error type and significance of the error. This table shows that the major random error besides the MWS AOA accuracy is the error produced from aircraft flexure and vibration. The FTS FOV requirement is determined by the following formula:

$$\text{FTS FOV} = 2 * [(3*\text{RSS of the Random Errors}) + \text{Bias Errors}]. \quad (3)$$

The factor of 3 is required to insure that handoff occurs with a greater than 98% probability. Based on Equation 3 the FTS FOV requirements can be calculated for each of the MWS approaches and the general magnitude of the FOVs is listed in Table 4.

Table 3. Angular Error Sources Contributing to FTS FOV Requirement

ERROR SOURCE	TYPE	MAGNITUDE	SOURCE
AOA Accuracy	Random	MWS Dependent	Engineering Estimate
Aircraft Flexure Error	Random	Significant	Aircraft Manufacturers
Transmitter Settling Error	Random	Insignificant	Engineering Estimate
Resolution Induced Error	Bias	MWS Dependent	Engineering Estimate

Parallax Correction Error	Bias	Significant	Engineering Estimate - Installation Dependent
MWS/Transmitter misalignment	Bias	Significant	Aircraft Manufacturers
Missile Motion Errors	Bias	MWS Dependent	Analysis based on missile rates

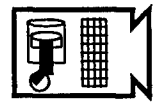
Table 4. FTS FOV Requirements for Each MWS Approach

MWS DESIGN APPROACH	REQUIRED FTS FOV
Low Resolution EO	Big
High Resolution EO	Medium
Scanning IR	Medium

5.2.2 FTS Hardware Tradeoffs

Since the FOV of the FTS was determined by our MWS requirements and since it must be an IR sensor for PBO missile tracking, the primary hardware tradeoff issues deal with the type of detector array. In this section we will examine several detector array options for the FTS as shown in Table 5. Each of these array choices is readily available and low risk[3].

Table 5. FTS Detector Array Options

DESIGN PERFORMANCE CONSIDERATION	 TE Cooled HeCdTe	 Cryo Cooled HeCdTe	 Cryo Cooled PtSi	 Cryo Cooled InSb
Array Sizes	up to 128x128	up to 256x256	up to 512x512	up to 512x512
Sensitivity	Low	High	Medium	High
PBO Tracking	No	Yes	No	Yes
Cool Down Time	Fair	Good	Poor	Poor
Initial Cost	Med	Med	Low	Med
Life Cycle Cost	Low	Med	Med	High
MTBF	Med - requires fan	Med - cryo cooler at >77°K	Low - cryo cooler at 77°K	Low - cryo cooler at 77°K

One of the first features to be examined is the number of detector elements. Detector arrays are readily available in square sizes up to 512 by 512 pixels. More elements in the array will increase the instantaneous field of view of the FTS and improve its track accuracy, sensitivity and resolution. However, the detector and processing costs increase with array size. The minimum acceptable array size is determined by the tracking accuracy requirement and the FTS FOV. Tracking accuracy is primarily a function of the instantaneous field of view (IFOV) of the array. If the optical designer slightly blurs the image on the focal plane array, centroid tracking will achieve an accuracy on the order of 1/10 of the IFOV[4]. The track accuracy is thus given by:

[3] We have intentionally not listed, due to cost and risk, detector arrays that contain a smaller detector pitch at the center of the array and a larger detector pitch on the outside. We also do not discuss the possibility of using costly zoom optics in the FTS design.

[4] Blurring out the optical image improves the track accuracy at the expense of the FTS sensitivity, which is another factor that must be considered.

$$\text{Track Accuracy} = \text{FTS FOV}/(\text{array linear size})/10. \quad (4)$$

Equation 4 can be solved for the array size as a function of the FTS FOV.

$$\text{Array linear size} = \text{FTS FOV}/\text{Track Accuacy}/10 \quad (5)$$

The FOV of the FTS for each MWS approach was discussed in section 5.2.1. Based upon equation 5 we can now discuss the array size for each MWS approach (see Table 6). As shown in Table 4, the low resolution MWS requires a large FOV and it will require a large detector array. If the resolution of the low resolution EO MWS is poor enough, the detector array size requirements get larger than 512x512 making the low resolution MWS impractical. Now we can see the importance of having an MWS with reasonable accuracy and resolution. To use a smaller detector array requires an accurate MWS with reasonable resolution.

Table 6. Detector Array Sizes versus MWS Approaches

MWS APPROACH	FTS FOV REQUIREMENT	DETECTOR ARRAY REQUIRED
Low Resolution EO	Big	Large
High Resolution EO	Medium	Medium
Scanning IR	Medium	Medium

The other major determination for the FTS is the detector material and cooling. In order to fully address this issue, an analysis would have to be performed to determine if each array and the associated optics would be able to accurately track the worst case missile in a clutter environment. The worst case missile signature would naturally be caused by a long range missile in PBO. During PBO a missile motor has burned out and the tracker has to track hot parts on the missile body. This requires a very sensitive FTS since the missile is in proportional navigation and presents a small cross sectional viewing area to the tracker. This paper will not go into this tracking analysis; however, some general comments will be made about detector material and cooling.

The detectivity of PtSi is an order of magnitude lower than HeCdTe or InSb, and would typically require large optical elements to provide enough gain to track long range threats in PBO. HeCdTe has the distinct advantage of a relatively high operating temperature (117°K) compared to InSb (77°K). It can even be operated at temperatures as high as 175°K, allowing thermoelectric cooling. However, when thermoelectrically cooled its detectivity is reduced by 2 orders of magnitude. Thus, a thermoelectrically cooled HgCdTe array would also probably be impractical due to the large optical elements required for PBO missile tracking. Based upon the PBO tracking requirement, cryo cooling is probably required. Both InSb and HgCdTe can be cryo-cooled yielding high sensitivity. HgCdTe has the distinct advantage that the operating temperature can be raised above 77°K to the point where the minimum FTS sensitivity is achieved. This will extend the life of the cryo cooler and reduce cool down time.

5.2.3 Pointing Subsystem Hardware Tradeoffs

The pointing subsystem can have a variety of designs in order to achieve the required pointing accuracy, FOR, slew & settle time, and stabilization. The most fundamental tradeoff for this subsystem is how many degrees of freedom it should have. The one, two and a three (or four) degree of freedom (DOF) possibilities are shown schematically in Figure 5.

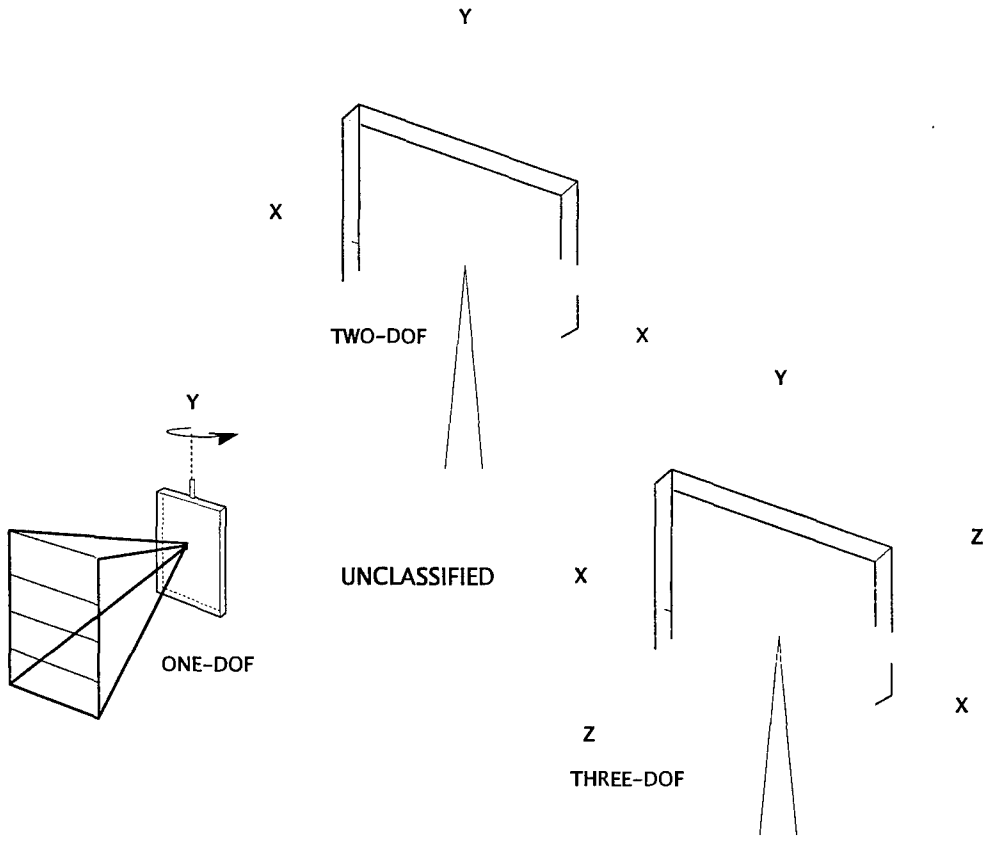
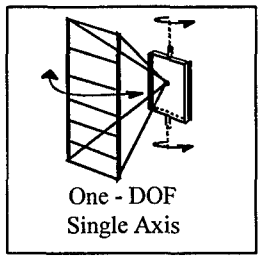
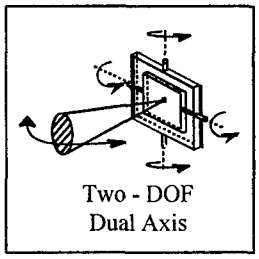
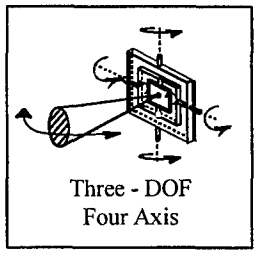


Figure 5: The one, two and three degree of freedom pointing system options.

The characteristics of each of these systems are summarized in Table 7. We have already stated that we need to point a narrow jamming beam in order to produce a practical DIRCM system. Thus the one DOF configuration is rejected. At first glance, it may seem that the two DOF system is ideal as it can point anywhere in the field of regard and is considerably less complex and costly than the three degree of freedom configuration. The problem with the 2 DOF design is that one cannot stabilize the jamming beam or FTS image within a 10 - 15 degree angle off nadir. This represents a large area of unprotected coverage. The only alternative is to limit the mounting of the 2 DOF system such that nadir is always straight up or straight down where IR missiles typically do not engage. Even this mounting is not effective if the host platform exercises moderate own ship motions. The two degree mounting constraints prove to be a severe limitation when trying to mount the system on several different platforms.

In addition to achieving a large FOR, there is a strong engineering reason for the use of a 3 (or 4) DOF system. Stabilization of the entire pointing system in a 2 DOF scheme will require high torque, high bandwidth motors to counter vibration, wind torque and own ship motion effects. These motors must not only move a large mass quickly, but they must move it against the high friction created by the weathertight seals that will be required on the pointing system housing in order to protect the delicate optics and electronics inside. A 3 DOF system, in contrast, can be implemented with a two-axis, course outer gimbal with the full FOR motion capabilities and a small, internal, two-axis inner gimbal with a very small range of motion (just enough to provide stabilization and correction of the outer gimbals pointing errors). The inner gimbal is protected from the elements and can have very low friction movement. The inner gimbal need only move a small mass, perhaps only one mirror, and can have lightweight, low torque motors. This will greatly simplify the task of stabilization and will actually improve the reliability of the overall pointing subsystem over the 2 DOF configuration.

Table 7. Characteristics of Pointing Subsystem Approaches

DESIGN PERFORMANCE CONSIDERATION	 One - DOF Single Axis	 Two - DOF Dual Axis	 Three - DOF Four Axis
Laser Pointing	No	Yes -except at nadir	Yes
Operation near Nadir	No - beam does not cover nadir	No - gimbal lock	Yes
Unconstrained Mount	No - beam must be aligned to AC Signature	No - nadir must be pointed up or down	Yes
Initial Cost	Low	Med	High
Life Cycle Cost	Low	High - large mass to move and position accurately	Med - inner gimbal reduces wear on outer gimbal
MTBF	High	Med - large servos and fine control	High - fine control mirror not exposed to elements

5.2.4 Source Packaging and Beam Delivery

The final tradeoff discussed in this paper concerns delivery of laser jamming energy to the pointing subsystem. Several design approaches can be considered, and they are dependent upon the laser source technology. One approach would integrate the laser into or onto the pointing system. The other approach is to have a separate subassembly for the laser and pipe this energy to the pointing subsystems. The piping can be performed using fiber optics or a free space coupled link. The characteristics of each of these approaches is summarized in Table 8.

There are several advantages for having a separate subassembly for the laser. Using this approach, one laser could be used to supply the jamming energy for several pointing systems. The optical power could actually be switched from one pointing subsystem to another depending on the engagement angle of the approaching threat. This is especially true if the laser source is expensive and one source provides sufficient power for multiple pointing systems. This approach also provides more freedom for the laser design since it can be mounted away from the pointing system in an internal compartment with more room.

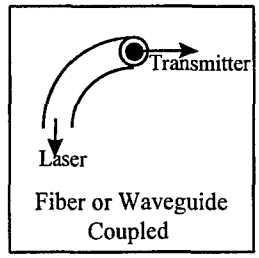
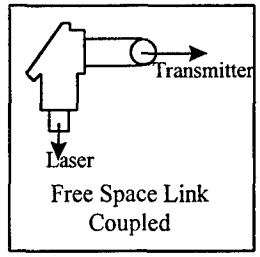
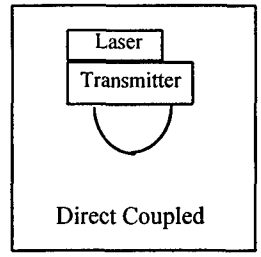
There are several disadvantages and technical challenges to the laser piping approach. The primary technical challenge is the laser piping itself. There are currently no good optical fibers that can handle sufficient optical power and provide long life and reliability. Typically these fibers utilize fluoride or chalcogenide glasses, which are brittle and subject to aging. Another approach is hollow waveguides; however, these are susceptible to vibration and flexure.

An alternate approach to laser piping might be to use a free space coupled link. In this approach mirrors are used with the beam transported in hollow conduit. Even flexible links can be made using rod lenses in a similar fashion to endoscopes. This approach may prove feasible over a limited path length and in installations where there is a well defined path from the laser to the pointing system. However, for most installations the free space link would have to curve around the skin of the aircraft envelope or around internal aircraft components. A free space link will not perform well over such a winding path. The free space link will be distorted by aircraft vibrations and maintenance will be difficult. When a countermeasure sys-

tem needs maintenance, the basic approach is to identify the broken LRU, replace it and continue the mission. The LRUs are made readily accessible to the aircraft ground crew for quick replacement. If a free space coupled link needs repair, alignment would have to be performed on the aircraft. This means the aircraft would not be free to fly its mission until the link is aligned and fixed. Thus the free space optical link is not a practical solution.

The final approach is mounting the laser source in or on the pointing subsystem. The primary advantage of this approach is no laser piping is required. This approach significantly reduces the risks involved in maintaining the alignment of the laser to the pointing system. The disadvantage of this approach is one laser is required for each pointing system. For most installations this approach also places constraints on the laser size since the laser must be attached directly to or in the pointing system. Since the pointing system must be attached to the aircraft skin there are overall constraints on how far into the aircraft skin it can be mounted and how much weight the supporting aircraft structure can hold. Any new laser upgrades would have to meet these constraints. In the last few years solid state lasers have progressed significantly in the mid IR. In fact there are now multiband, air cooled mid-IR lasers that provide significant jamming energy in a small laser package[5]. Based upon the improvements in laser technology and the limitations in laser piping technology the most practical approach at this time is directly coupling the laser to the pointing subsystem.

Table 8. Comparison of Beam Delivery and Source Packaging Approaches

DESIGN PERFORMANCE CONSIDERATION	 Fiber or Waveguide Coupled	 Free Space Link Coupled	 Direct Coupled
Source Mounting	Not Constrained	Not Constrained	Must be on or near gimbals
Source Packaging	More Flexible	More Flexible	Size and weight constraints
Source Upgradeability	Poor	Medium	Medium
Beam Losses	Med	Low	Low
Beam Distortions	Med	High	Low
MTBF	Med	Low	High
Life Cycle Cost	Med	High	Low
Spectral Bandwidth	High	High	High
Weight	Low	High	None - no intermediate coupling structure
Installation Difficulty	Med	High - requires rigid structure	Low
Risk	High - immature technology	High - very difficult installation, vibration sensitive	Low - reliable coupling method
Initial Cost	Med - only one laser, some installation labor	High - installation and alignment labor intensive	Med - requires one laser per head

[5] Northrop Grumman has demonstrated Band IV lasers in 1996 - a small air cooled, military qualified assembly.

6. Conclusions

In this paper we have presented some of the design tradeoffs that must be considered when designing a DIRCM system. The tradeoffs show that the design process must be iterative since many of the DIRCM subsystems effect the performance requirements of other subsystems. The design tradeoffs also demonstrate the impacts of the high performance probability requirements for each subsystem. Based upon this process several recommendations are made for the design of a DIRCM system including using a high accuracy, good resolution MWS, a 256x256 cryo cooled detector array for missile tracking, a 3 (or 4) DOF pointing system, and coupling the laser source directly to the pointing subsystem. Based upon this hardware configuration, a DIRCM system can be designed to meet the high aircraft survivability requirements.

Objective Crew Served Weapon: Lethality for the 21st Century

Presented by
John Cline - TACOM - ARDEC
Edward Daniels - Primex Technologies

Special Operations / Low Intensity Conflict (SO / LIC) Symposium
18 February 1998
Arlington, Virginia

Objective Crew Served Weapon - OCSW



PRIMEX TECHNOLOGIES

GENERAL DYNAMICS ARMAMENT SYSTEMS

Dayron

J.S.S.A.P. JOINT SERVICE SMALL ARMS PROGRAM

OCSW PROGRAM OBJECTIVES

- Define, Develop and Demonstrate a Lightweight, Two-Man Portable, Ground Mounted Crew Served Weapon System That Provides:
  - High Probability of Incapacitation and Suppression to 2,000 Meters Against Protected Personnel.
  - High Potential to Defeat Materiel Targets and Light and Lightly Armored Vehicles out to 2,000 Meters.
- System Design is Driven to Provide The User With Maximum Effectiveness At Minimum Weight
- Adaptations to the Vehicle Armament Role

The OCSW Team

JSSAP	Col Ehly - Chairman
Army	Col Hobbs
Marines	Col Owen
Air Force	Col Eldard
Navy	Cmdr Huss
Coast Guard	Cpt Hail
SOCOM	Col Voorhees

GOVERNMENT COMMUNITY

- USER NEEDS
- GOVERNMENT TECHNICAL RESOURCES

PRIMEX

- PRIME CONTRACTOR
- SYSTEM INTEGRATION
- SYSTEM ANALYSIS
- AMMUNITION

GENERAL DYNAMICS ARMAMENT SYSTEMS

- WEAPON
- GROUND MOUNT
- AMMUNITION CONTAINER

DAYRON

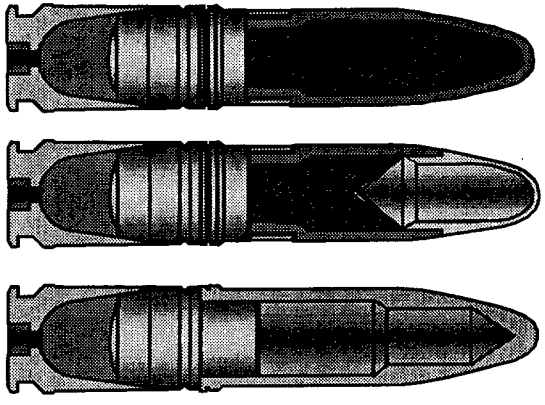
- REMOTE SETTABLE AIR BURST FUZE

OCSW System Baseline

FULL SOLUTION FIRE CONTROL: DERIVED FROM OICW

Caliber:	25mm
Cartridge Weight:	0.368 lb (167 grams)
Projectile Weight:	0.291 lb (132 grams)
Impulse:	13.4 lb-sec
Chamber Pressure:	40,000 psi
Muzzle Velocity:	1393 ft/sec
Maximum Effective Range	2,000 m
Time of Flight to 2,000 m	8.9 sec
Maximum Range	3,600 m



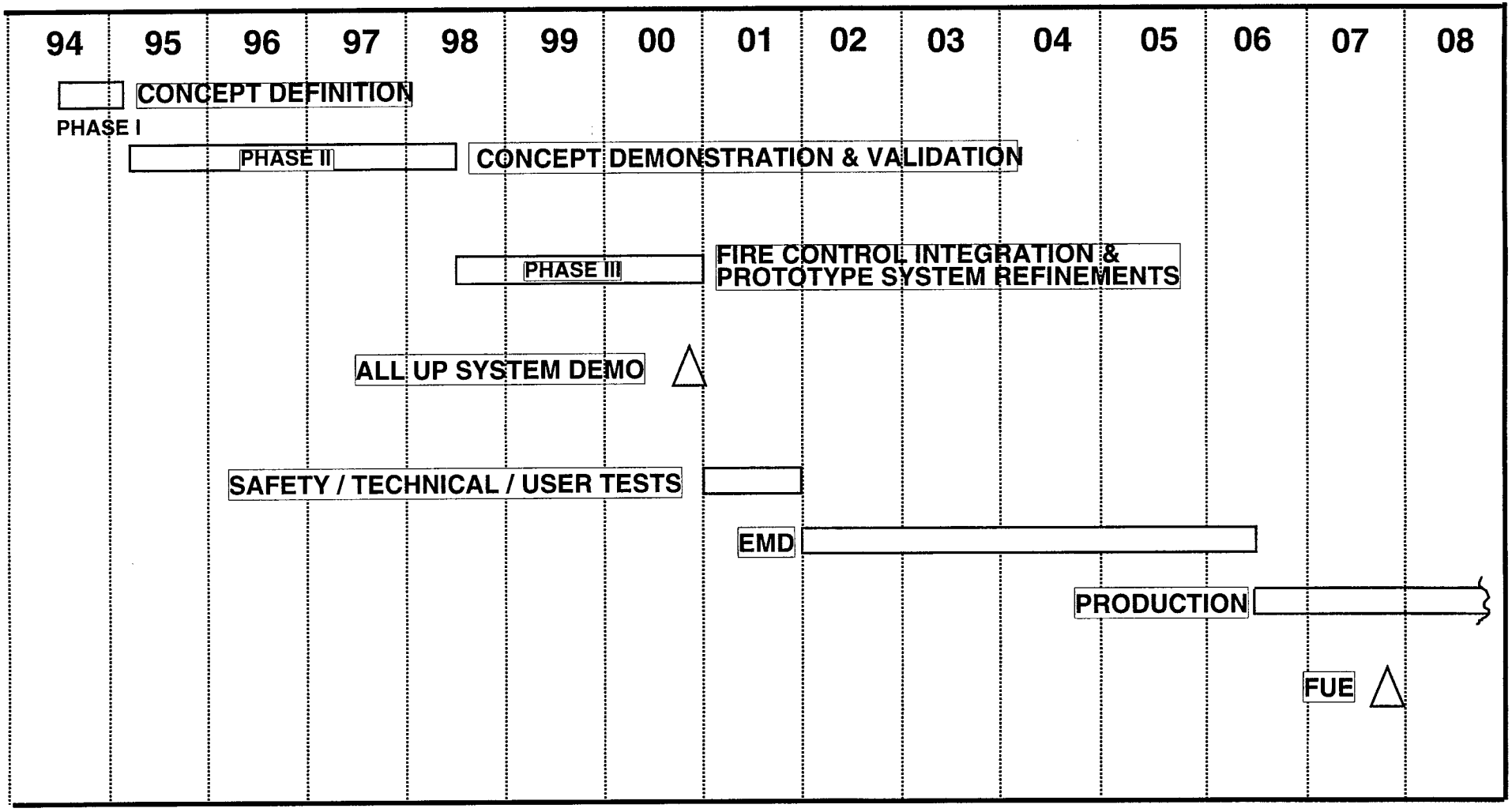


SYSTEM WEIGHT UNLOADED:	(36.6 lb)
GUN WEIGHT	23.0 lb
MOUNT WEIGHT	9.0 lb
FIRE CONTROL WEIGHT	4.6 lb

ROUNDS AVAILABLE IN TRANSPORT MODULES

Two 35.0 POUND MODULES	74 ROUNDS
Three 35.0 POUND MODULES	151 ROUNDS

OCSW Schedule Overview Update



PRIMEX TECHNOLOGIES

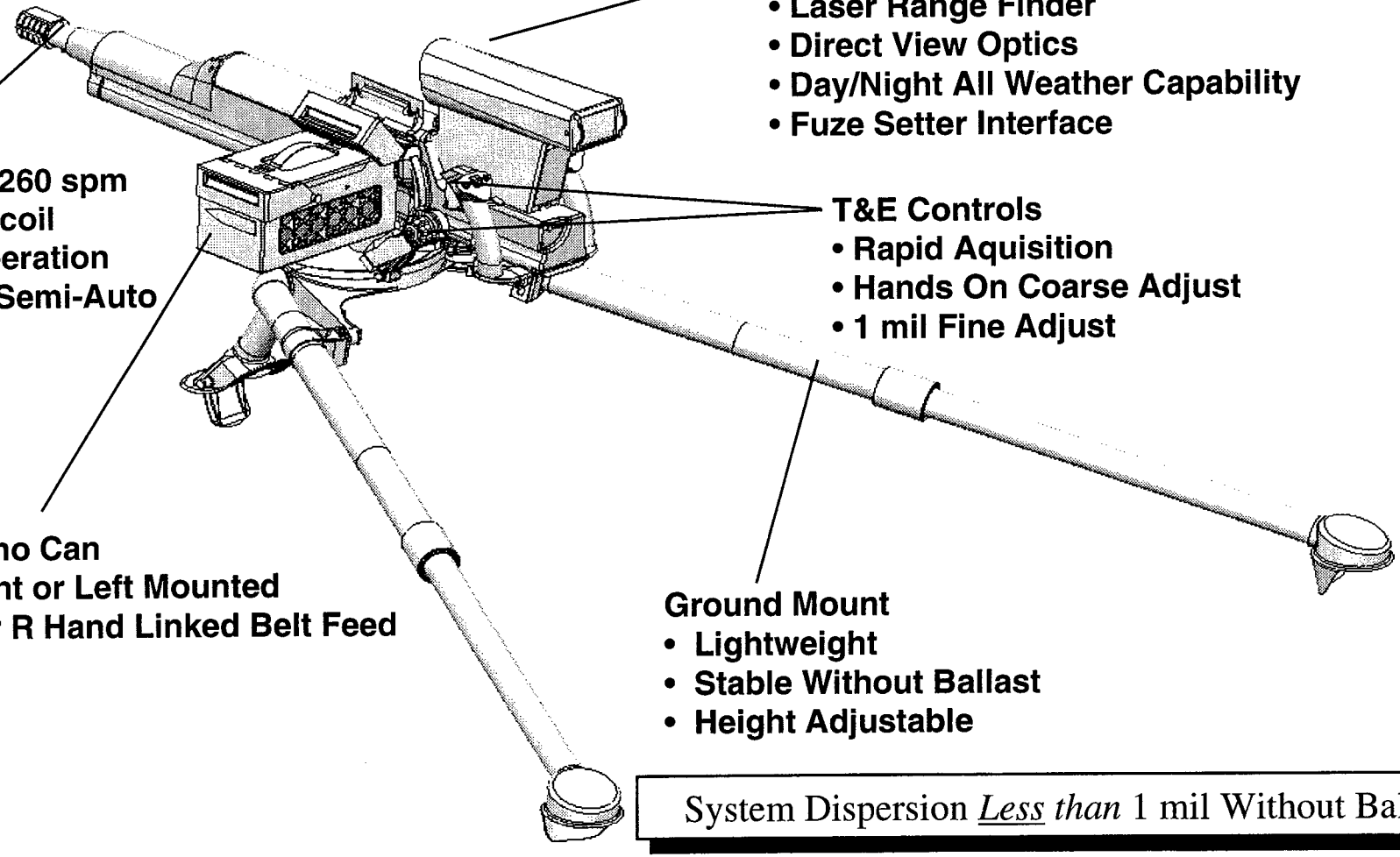
GENERAL DYNAMICS ARMAMENT SYSTEMS

Dayron

J.S.S.A.P. JOINT SERVICE SMALL ARMS PROGRAM

OCSW Weapon

Ground Mount Configuration



Full Solution Fire Control
- Laser Range Finder
- Direct View Optics
- Day/Night All Weather Capability
- Fuze Setter Interface

Weapon
- 25mm, 260 spm
- Soft Recoil
- Gas Operation
- Full or Semi-Auto

T&E Controls
- Rapid Aquisition
- Hands On Coarse Adjust
- 1 mil Fine Adjust

Ammo Can
- Right or Left Mounted
- L or R Hand Linked Belt Feed

Ground Mount
- Lightweight
- Stable Without Ballast
- Height Adjustable

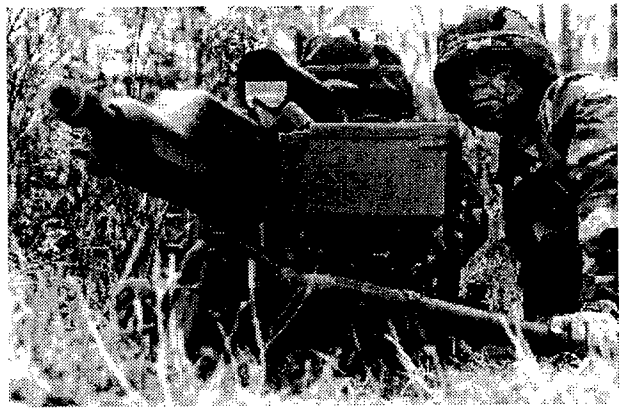
System Dispersion *Less than* 1 mil Without Ballast

The Light Infantry Weapon



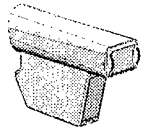
Easily Deployed
By A Crew Of Two



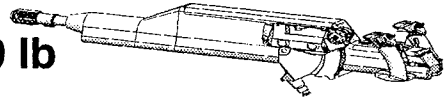


Transport Modules

Fire Control 4.6 lb



Weapon, Pintle 26.0 lb

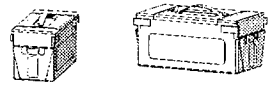


Module A: 30.6 lb



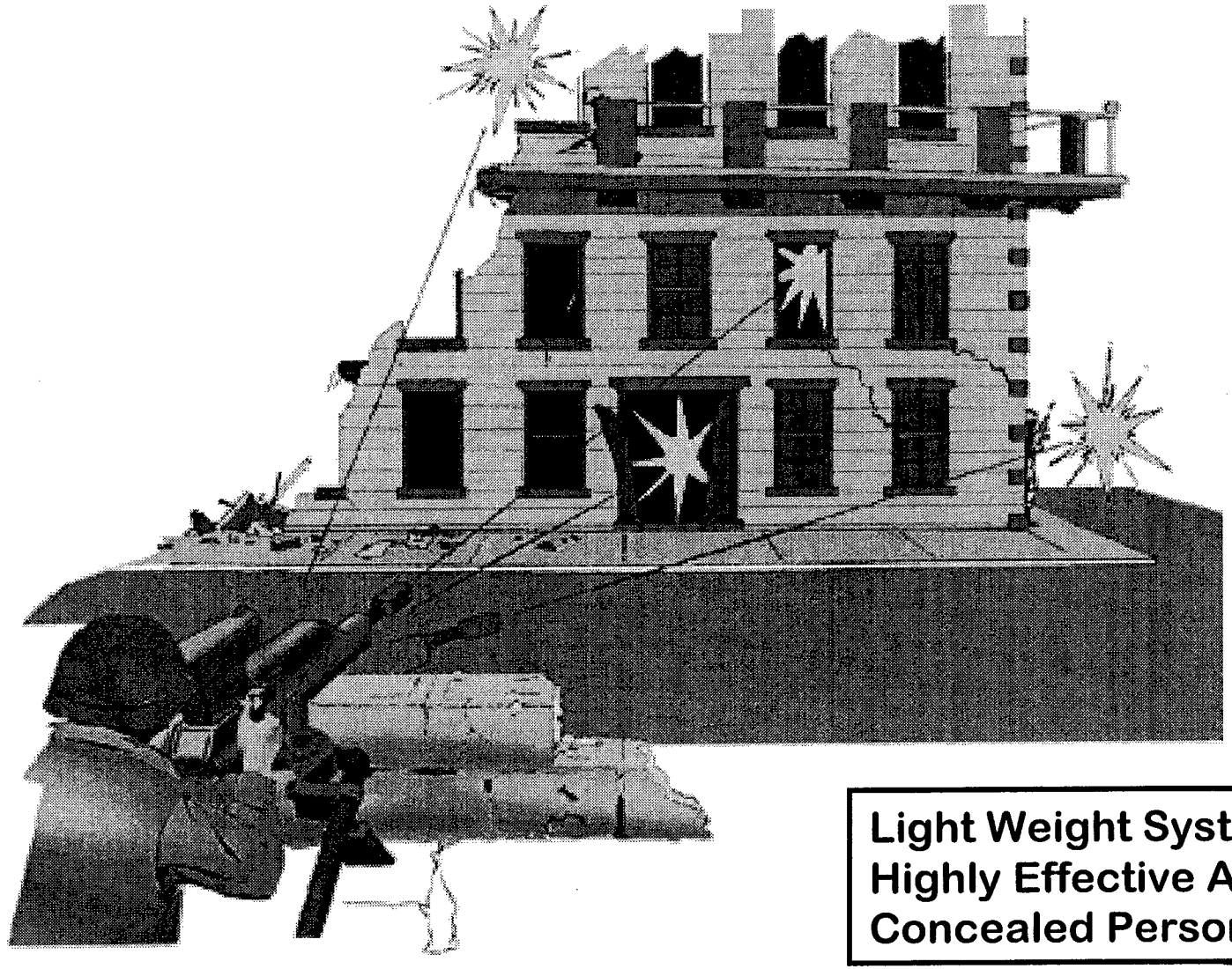
Tripod Less Pintle 6.0 lb

Ammo Boxes
2 @ 14 lb ea = 28 lb



Module B: 34.0 lb

OCSW in MOUT Environment



Light Weight System
Highly Effective Against
Concealed Personnel

PRIMEX TECHNOLOGIES

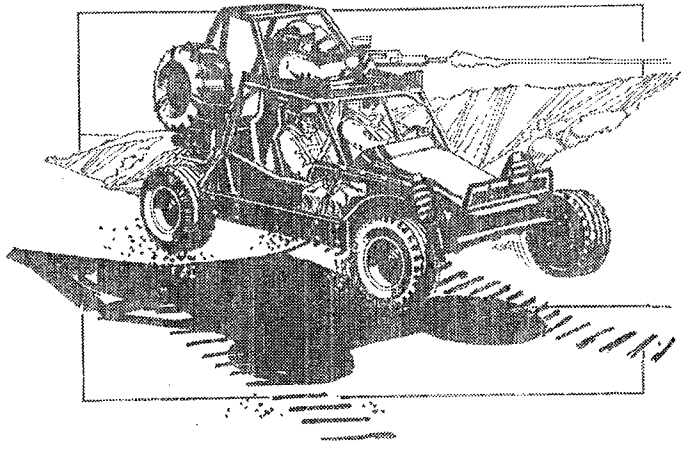
GENERAL DYNAMICS ARMAMENT SYSTEMS

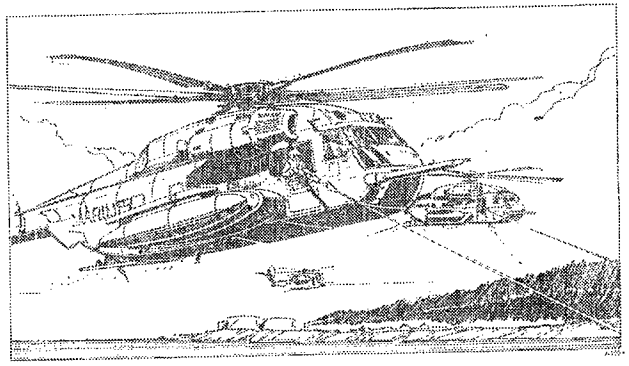
Dayron

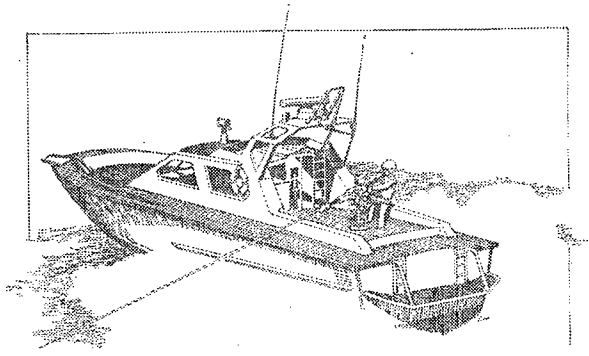
J.S.S.A.P. JOINT SERVICE SMALL ARMS PROGRAM

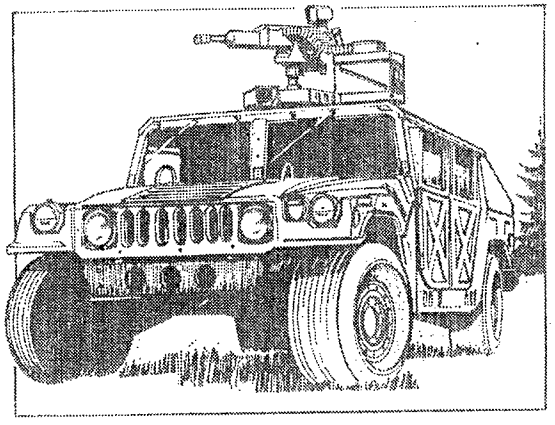
OCSW Vehicle Applications

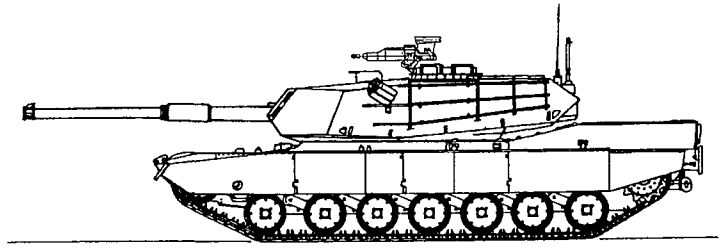
The OCSW Can be Easily Adapted as Primary / Secondary Armament on a Wide Variety of Vehicles and Water Craft, and May Be Quickly Dismounted for Perimeter Defense

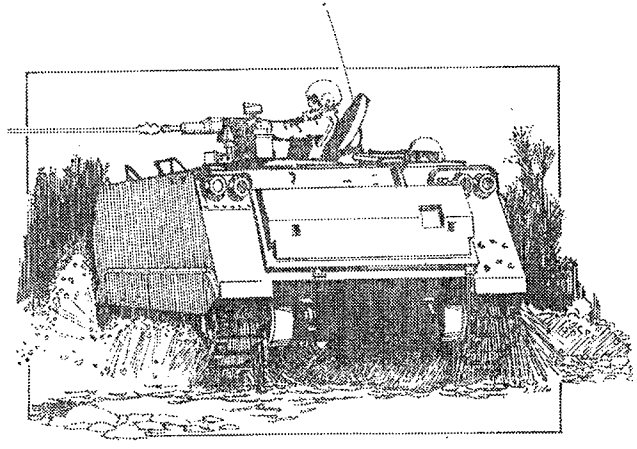












PRIMEX TECHNOLOGIES

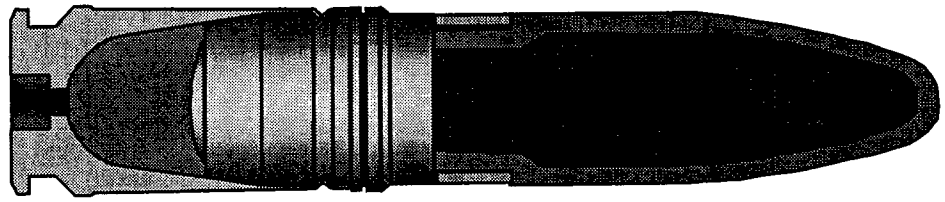
GENERAL DYNAMICS ARMAMENT SYSTEMS

Dayron

J.S.S.A.P. JOINT SERVICE SMALL ARMS PROGRAM

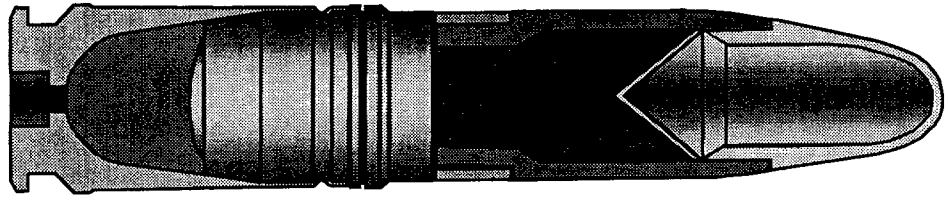
OCSW Ballistically Matched 25mm Ammunition Family

HE Cartridge



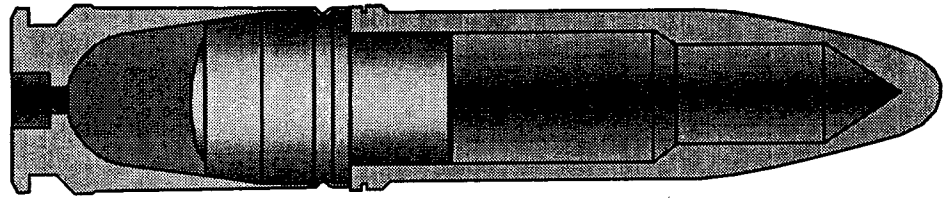
- Prescored Steel Warhead
- LX-14 High Explosive
- Defeats PASGT Vest & Helmet
- Aluminum Cartridge Case
- Standard Ball Propellant
- Standard Percussion Primer

AP Cartridge



- Defeats 51mm RHA
- Defeat 51mm HHA (Goal)

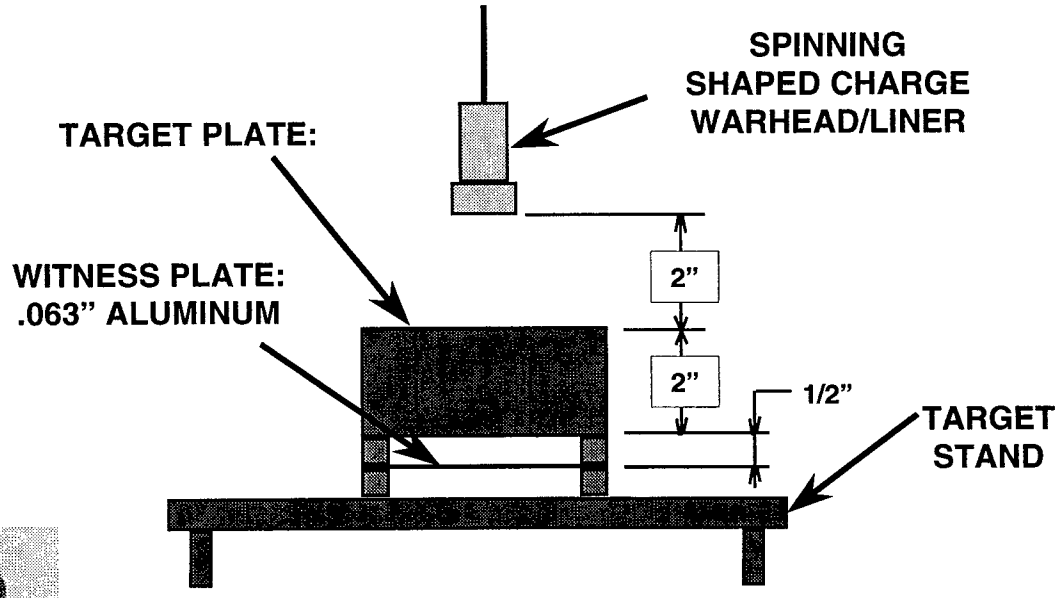
TP Cartridge

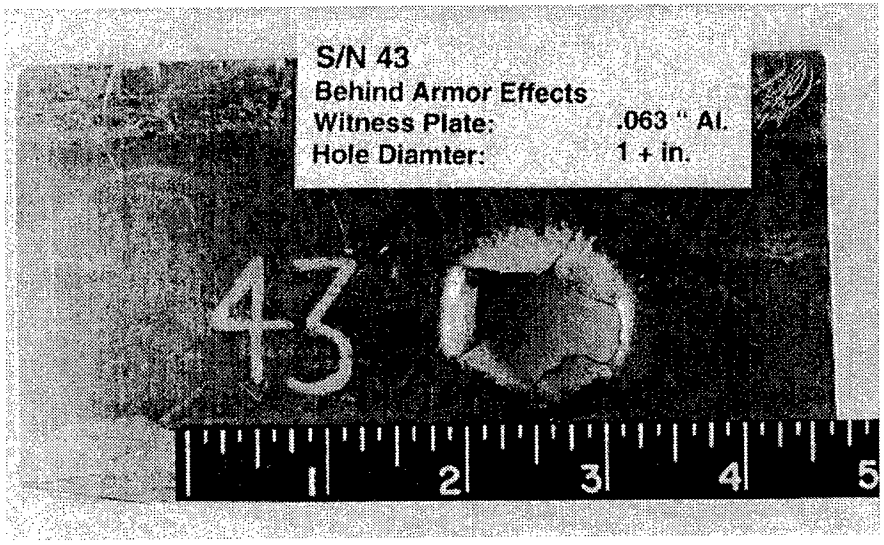


- Two-Piece Projectile
- Integral Rotating Band

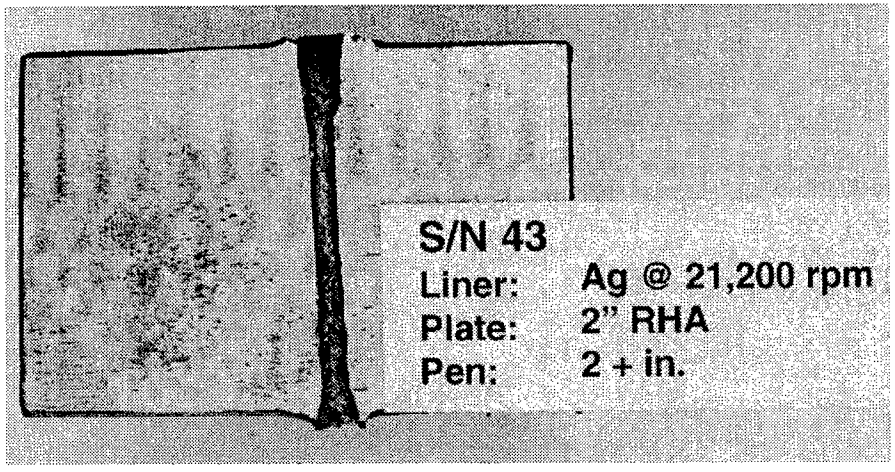
AP Warhead Performance

- Wide Angle, Shallow Cone, Shaped Charge Liner Consistently Penetrates 2.0 inch RHA with Sizable Hole in Witness Plate
- 15 gram LX-14 Explosive
- 2.0 inch Standoff
- 21,000 - 28,000 RPM Spin





Behind Armor Witness Plate



Target Plate

PRIMEX TECHNOLOGIES

GENERAL DYNAMICS ARMAMENT SYSTEMS

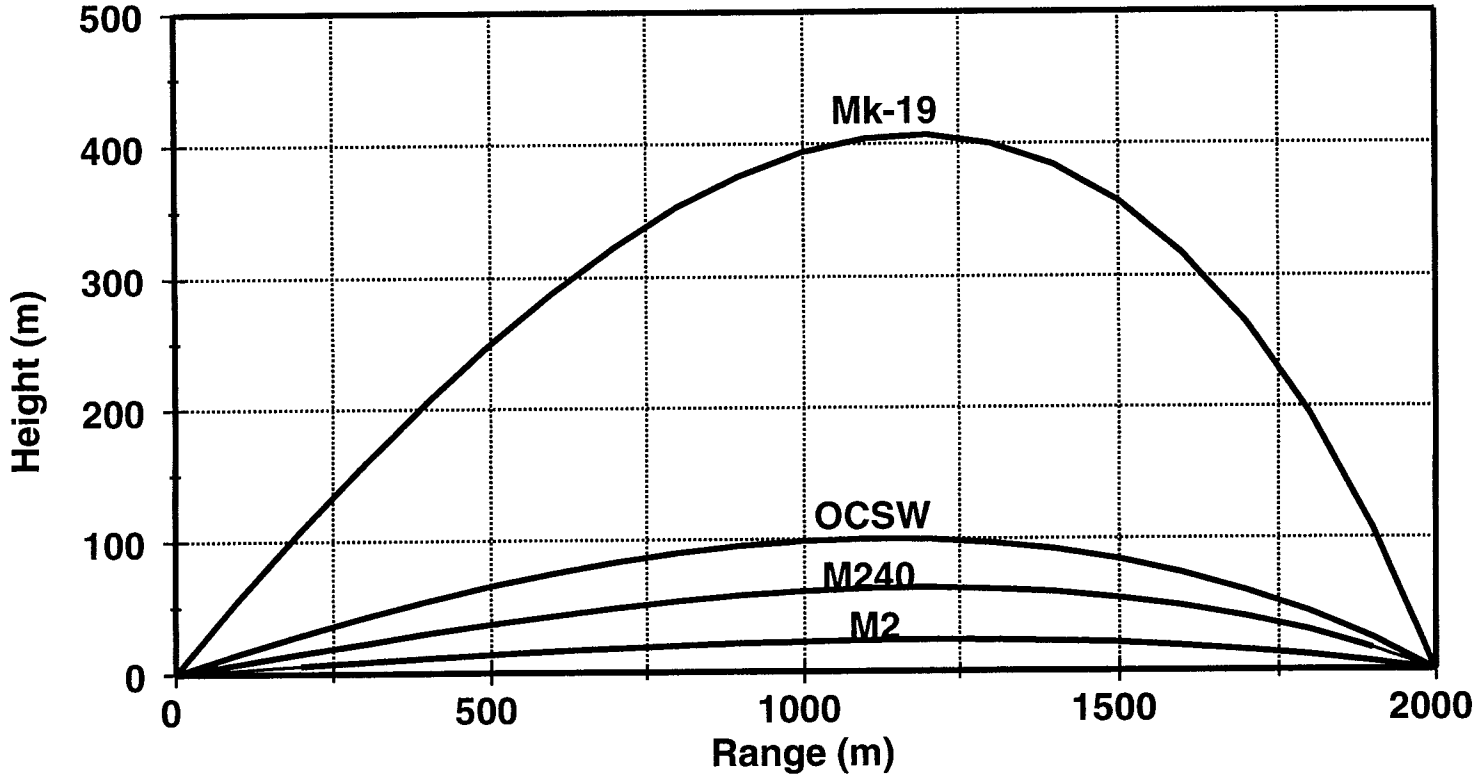
Dayron

J.S.S.A.P. JOINT SERVICE SMALL ARMS PROGRAM

OCSW Fuze Features

- Remote Settable Electronic Time Fuze
- Independent Point Detonating Backup with Super Quick or Delay Options
- Independent Self-Destruct
- Precision Air Burst Function Compensates for Muzzle Velocity Variation
- Fuze Powered and Set in Feed System
- Fuze Re-Set Each Time a Target is Lased
- Mechanical Escapement Safe and Arm

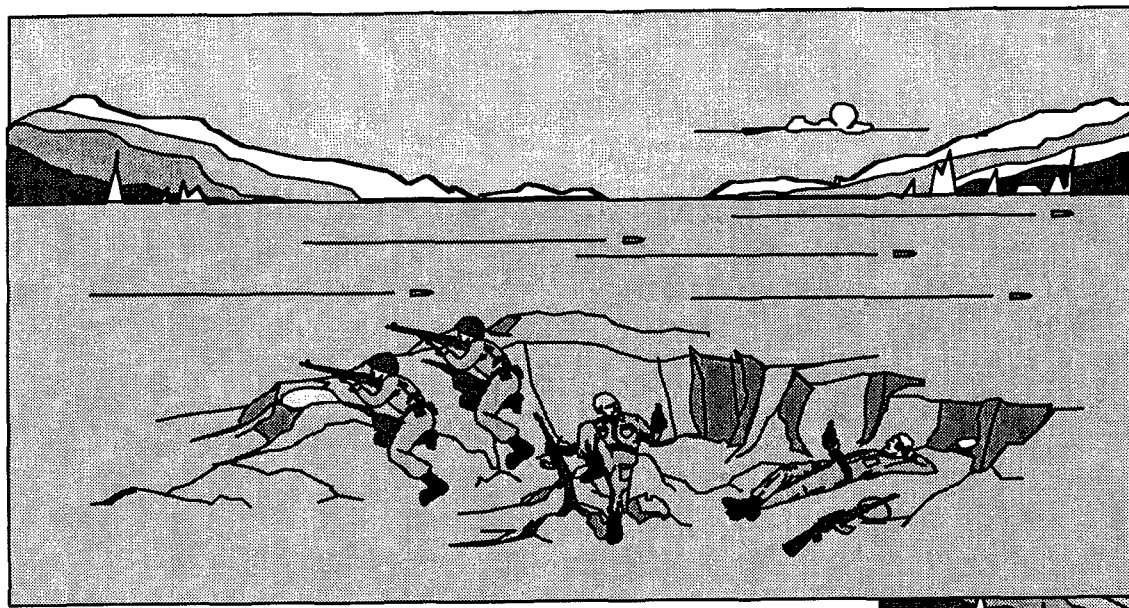
Ammunition Trajectory Comparisons



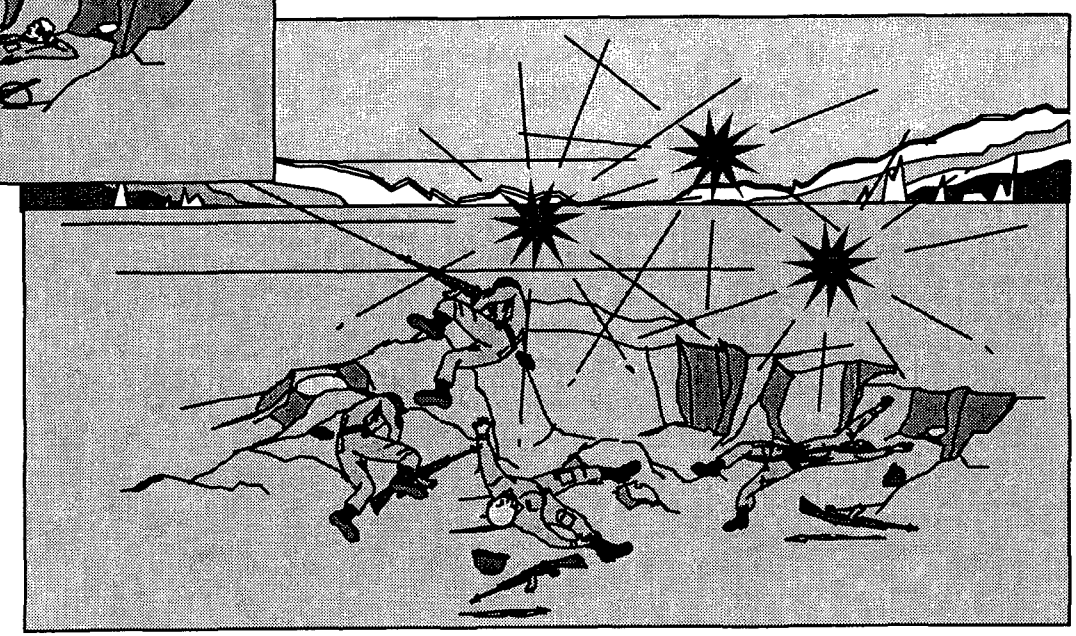
OCSW Provides the User With Increased Stand-Off Lethality and Reduced Engagement Time

TOF (sec)	500m	1000m	1500m	2000m
OCSW	1.55	3.55	5.97	8.89
M2	0.62	1.47	2.65	4.24
Mk-19	2.78	6.49	11.39	17.99
M240	0.77	2.19	4.18	6.68

There Is No Hiding From Air Bursting Munitions

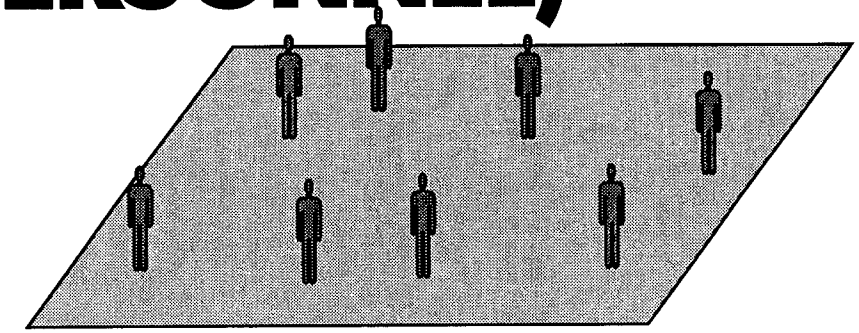


KE Ammunition Can Only Suppress Personnel In Defilade

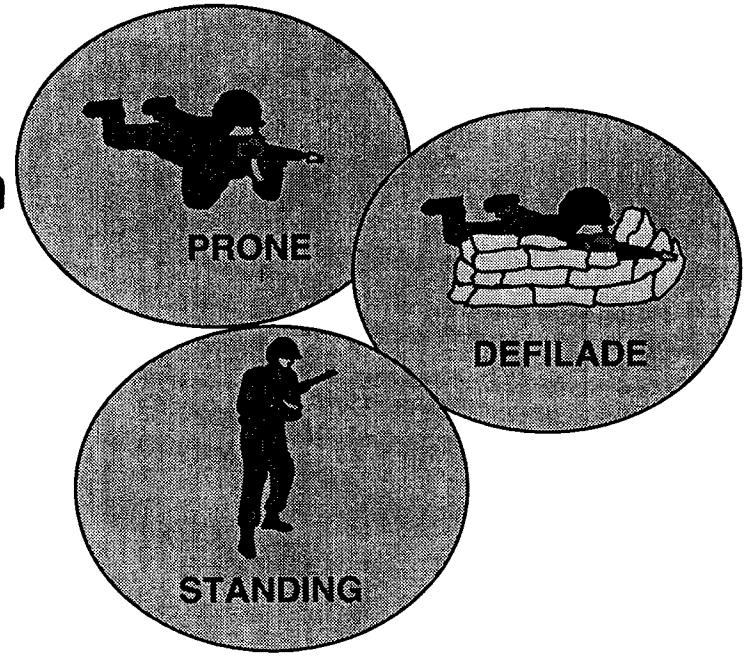


Air Burst Ammunition Kills

TARGET (ANTI-PERSONNEL)



- Target (50m x 10m area)
  - 8 man squad
  - Standing / Prone / Prone-Defilade
- Range of Engagement
  - 0 to 2000 m
  - Effectiveness Computed at 200m Increments
- Effectiveness Analysis Conducted Using AMSAA Models (CASRED, FBAR, LITTON)



System Comparisons

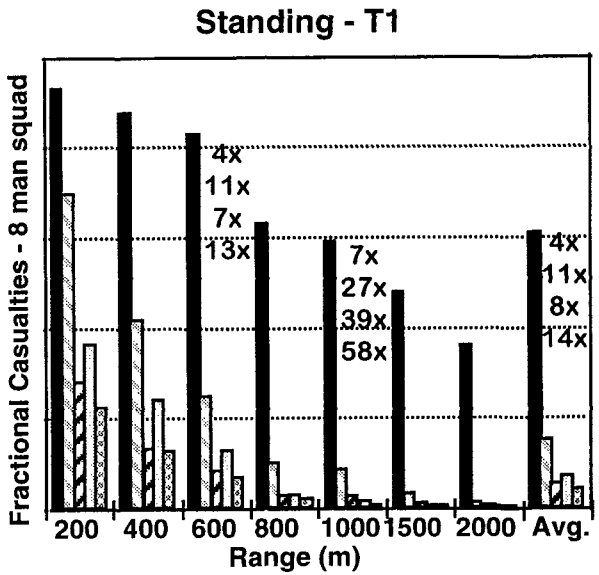
System	40mm Mk 19 Mod 3	Cal .50 M2HB	7.62mm M240	25mm OCSW
Weapon Weight (lb)	75.6	84.0	24.2	23.0
Mount Weight (lb)	65.4	46.1	19.2	9.0
Fire Control (lb)	N/A	N/A	N/A	4.6 (est)
Unloaded System Weight (lb)	141.0	130.1	43.4	36.6
Ammunition Weight (lb / Round)	1.24	.38	.10	.45

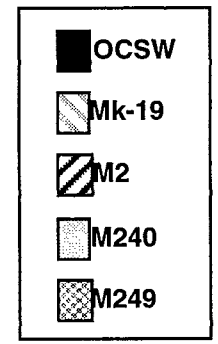
Ammunition Load

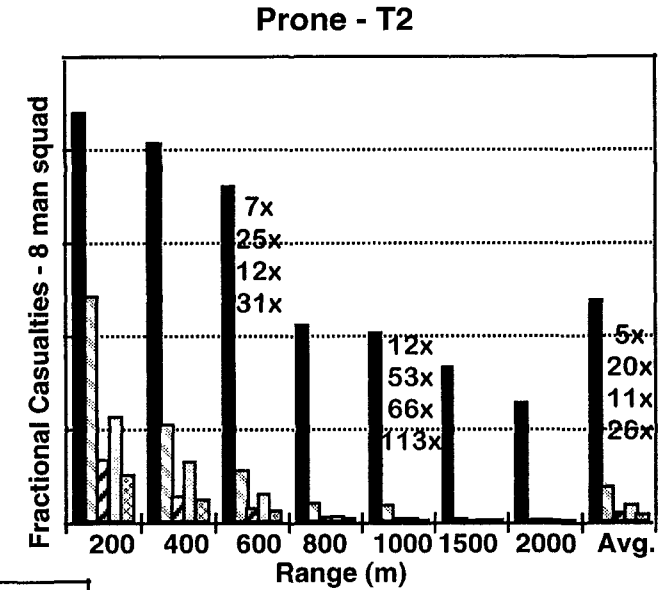
Lbs Ammo / Kill	111	117	25	3
Lbs Ammo / 60 sec Suppression	157	133	28	12

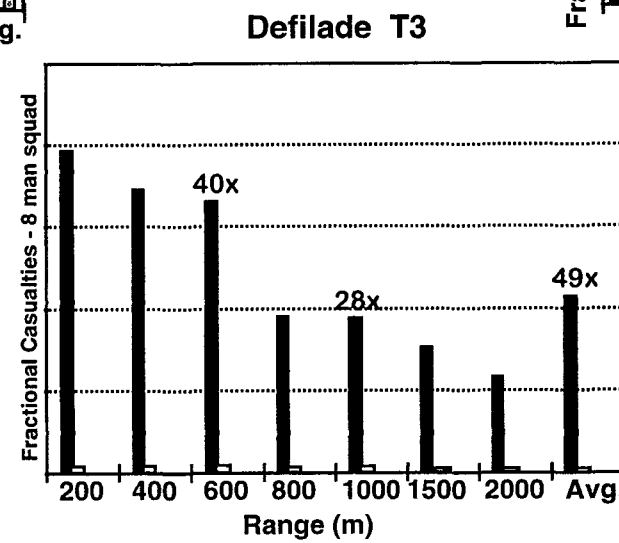
A Lightweight System with Airburst Munitions is Key to OCSW Effectiveness

Baseline Fractional Casualties for All Systems







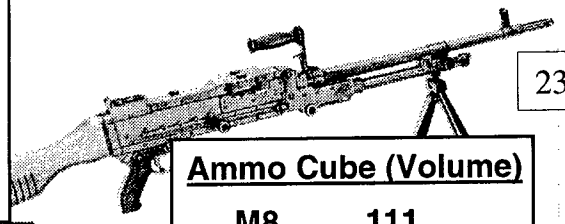


All *scenarios are using:*
eight 3rd bursts at each range.
30 sec Assault Casualty Criteria.
personnel in winter clothing
with PASGT vest and helmet.

OCSW Payoff - Anti-Personnel Role

(Typical Marine Infantry Battalion)

30 Day Supply (Rds)	
M8	21,060
M430	13,740
M80	60,720
Total	95,520

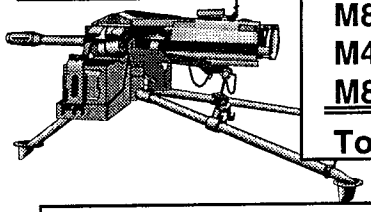


23 Each M240

39 Weapons	=3,188 Pounds
39 OCSWS	=1,427 Pounds

Ammo Cube (Volume)	
M8	111
M430	309
M80	105
Total	525 cu.ft.

10 Each Mk19



Kills	
M8	69
M430	154
M80	256
Total	479

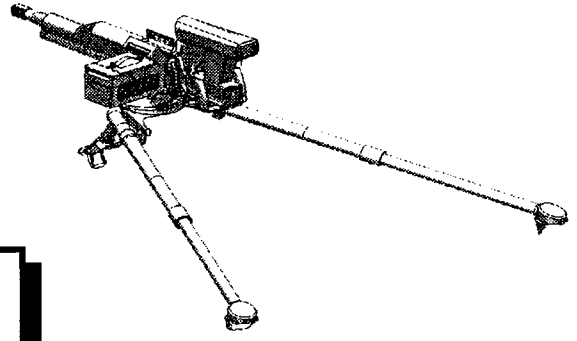


6 Each M2

Ammo Weight	
M8	8,098
M430	17,032
M80	6,264
Total	31,394 lb.

Ammo Cost	
M8	$ 42,120
M430	219,840
M80	33,396
Total	$295,356

OCSW		Comparisons
Rounds	3,170	30x less
Kills	479	same
Ammo Cube	54	9.7x less
Ammo Weight	1,429	22x less
Ammo Cost	$69,428	4.25x less



Substantially Less Weight and Volume to Get to the Conflict With a Significant Improvement in Cost Effectiveness

PRIMEX TECHNOLOGIES

GENERAL DYNAMICS ARMAMENT SYSTEMS

Dayron

J.S.S.A.P. JOINT SERVICE SMALL ARMS PROGRAM

OCSW Deployment
(Typical Marine Infantry Battalion)

3 Truckloads (5-Ton) / 3 Drivers

Logistics

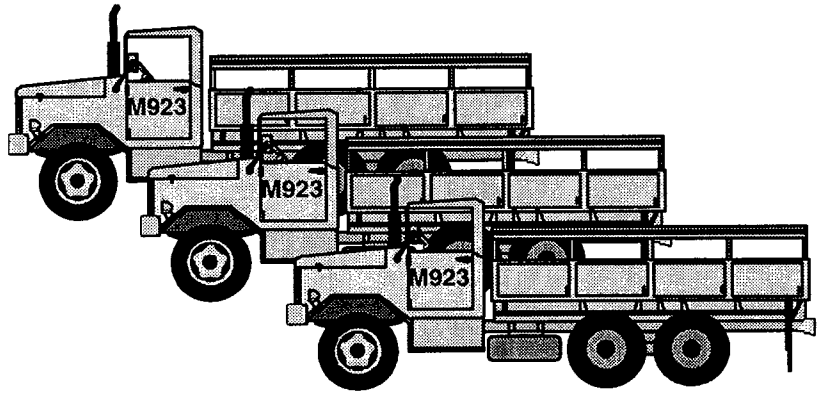
- **Conventional Ammo**

  Weight = 31,394 lbs.

  9.6 Pallets / 700 Boxes

  Avg. Box Wt. = 45 lbs.

  Ammo Cost = $295,356



- **Equivalent OCSW Ammo**

  Weight = 1,431 lbs.

  1.2 Pallets / 103 Boxes

  Avg. Box Wt. = 14 lbs.

  Ammo Cost = $69,428

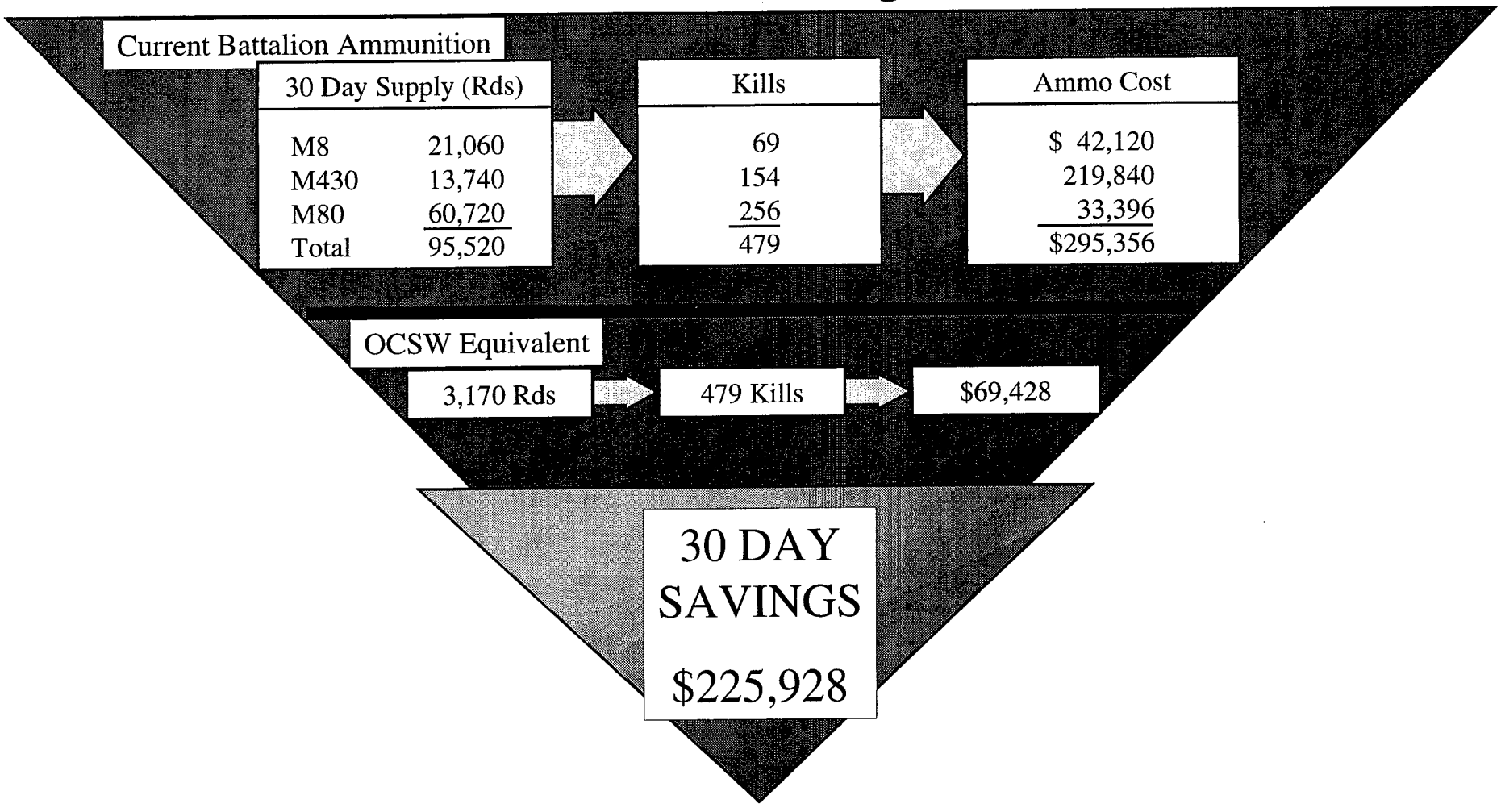
1 Truckload / 1 Driver



HMMWV

OCSW Allows Significant Reductions in Logistic Support and Equipment

OCSW Payoff



OCSW Provides Equal Effectiveness at 1/4 the Cost

FIRESTORM

Objective Individual Combat Weapon (OICW)

Presentation to the

Ninth Annual

Special Operations/Low Intensity Conflict (SO/LIC)

Symposium

February 18, 1998

Raytheon

PRIMEX TECHNOLOGIES

DE

DAYRON

OTGI



Programmatic Details

- Customer:
  - Joint Service Small Arms Program (JSSAP) Office, Picatinny Arsenal NJ
  - JSSAP management committee includes all 6 services
  - Army and Marines primary users
- Competition: Alliant TechSystems

Small Arms Evolution Plan

Phase I

Phase II

1995 1996 1998/2000 2015

M9

M16A2 M16 (MOD WPN)

M203

M4/M4A1 M4 (MOD WPN)

M249

M60 Upgrade

.50 CAL

MK 19

M24 SWS

OPDW
Concept Under Development

OICW

AMMG
Concept Under Development
No Plans to Replace the M249
in the AR Role

OCSW

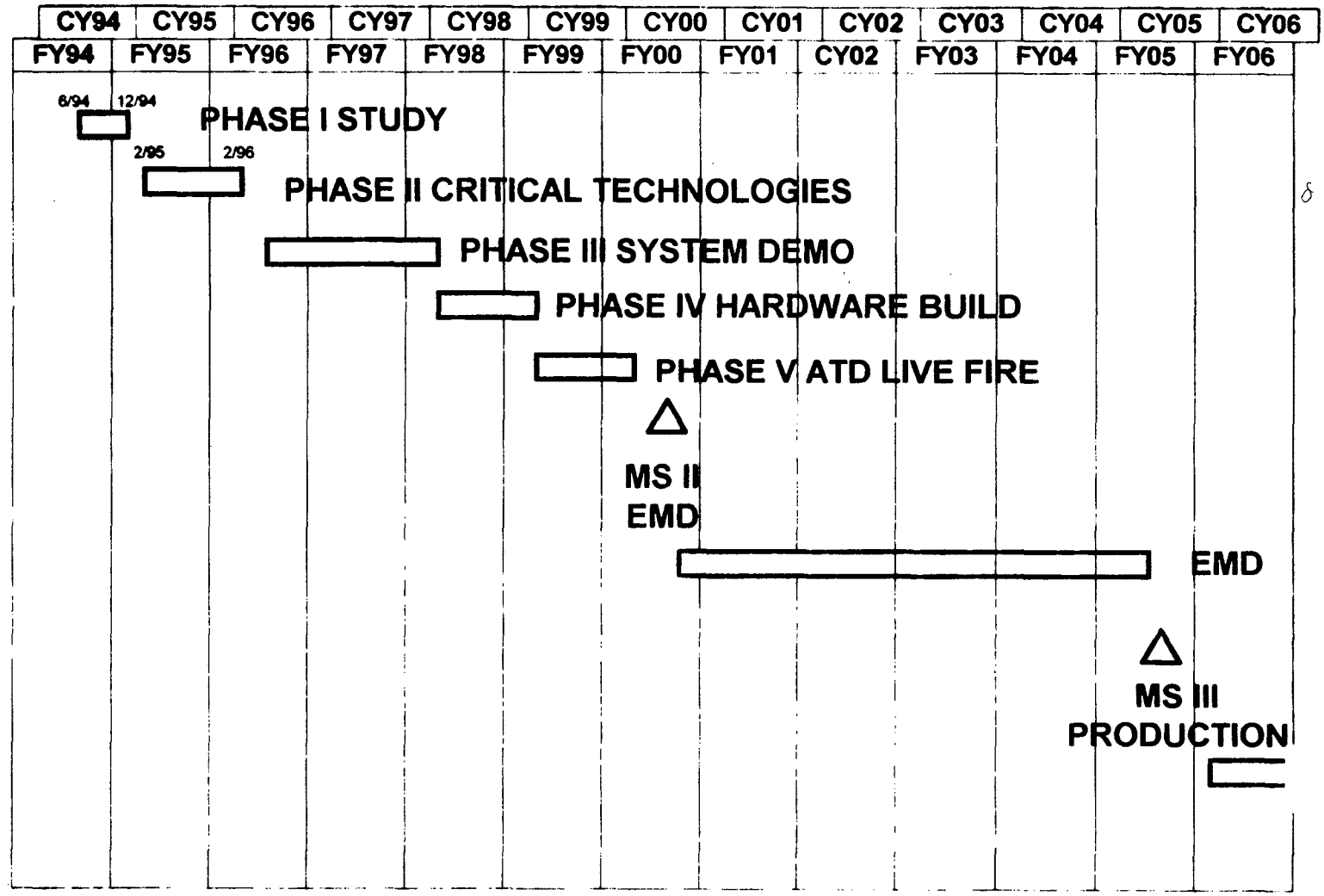
OSW
Concept Under Development

LEAP AHEAD
Target Effect
Accuracy
Range
Portability
Manprint

Payoffs

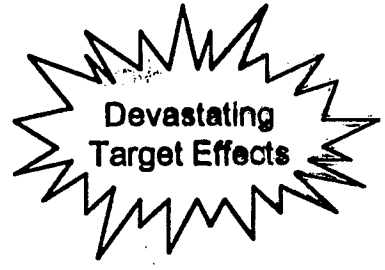
- Enhanced Performance
  - Hit Probability
  - Target Acquisition
  - Day & Night Operation
- Common Fire Control
- Adaptable for Technology Advancements

OICW Program Life Cycle Schedule



What Is The OICW?

- Ergonomically Designed, Multi-Functional Combat Weapon System
  - High Explosive, Air-Bursting Munition (20mm)
  - Kinetic Energy Projectile (5.56mm)
  - Modular & Compact, Full Solution Fire Control
    - Laser
    - Ballistic Computer
    - Environmental Sensors
    - Electronic Compass
    - Thermal Sensor



- 21st Century Individual Weapon System
- Replacement For The M16 Rifle Family

OICW
Leap Ahead
Solution

A NEW INDIVIDUAL COMBAT WEAPON
WHY?

CURRENT KINETIC ENERGY BULLET WEAPONS

- Effectiveness Requires Direct Hits
- Aim Error Limits Effective Range
  - Human Ability
  - Combat Stress
- Fire Control Improvements will Provide Only Limited Performance Increase
- Potential for Weight Reduction with New Improved Materials

CURRENT FRAGMENTING MUNITION WEAPONS

- Limited Range Weapon (~500 meters or Less)
- Surface Contact Detonating Munitions Require Impact Near Target
- Iron Sights Provide Inaccurate Targeting
- Large, Bulky Munitions Limit Soldier Carried Load
- Slow Time of Flight Munition
- Single Round Weapon with Slow Engagement Timelines

No Fully Integrated Combined Bullet-Fragmenting Munition Weapon Exists Today

OICW
Leap Ahead
Solution

A NEW INDIVIDUAL COMBAT WEAPON
WHY?



US Army Undertaking New 21st Century (Gen II) Land Warrior Thrust

- Extend Individual Soldier Battlespace (Less Soldiers, Same Mission)
- Overmatch; Leap Ahead Weapon Lethality Increase
- Digitized Soldier with Weapon Data Relay Capability
- Automated Forward Fire Support Coordinate Generation

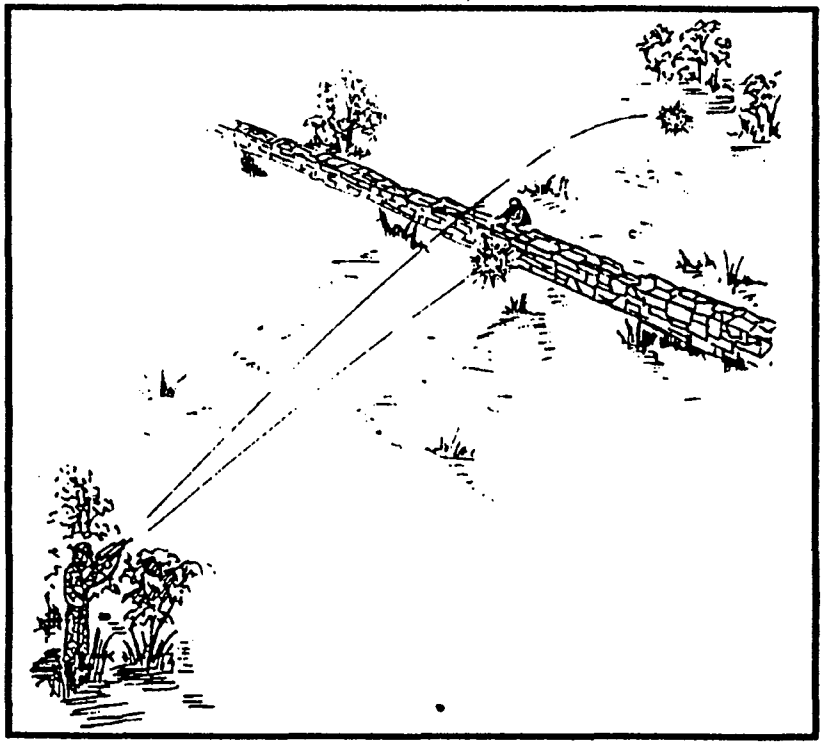
OICW The Leap Ahead Solution

HUGHES Olin

WHY OICW?

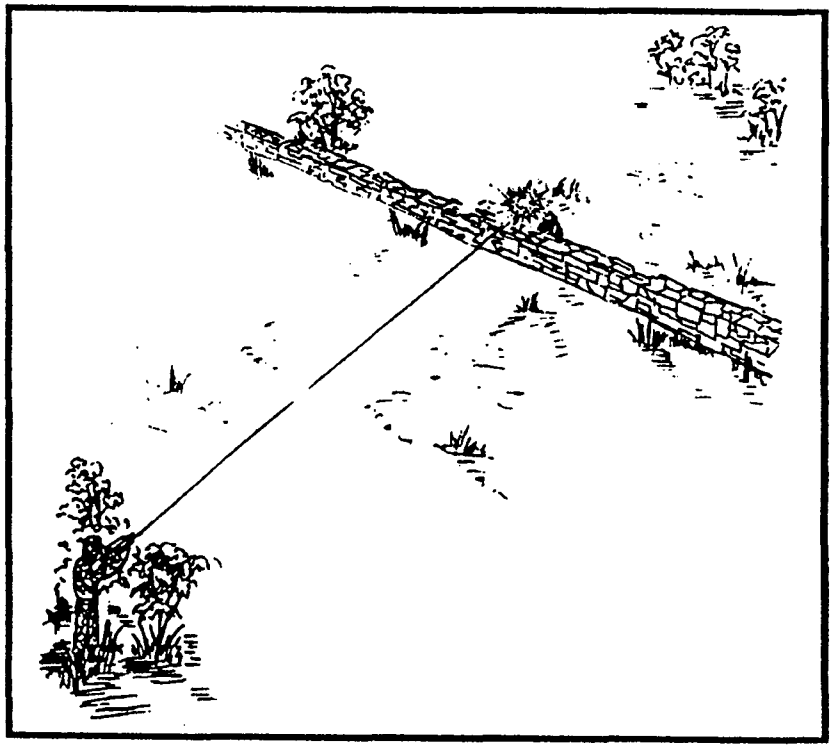
AIR BURST OICW SUPERIOR TO POINT DETONATING SOLUTIONS

M16/M203



- Point Detonation Only
- Max Range < 500 meters (HE Munition)

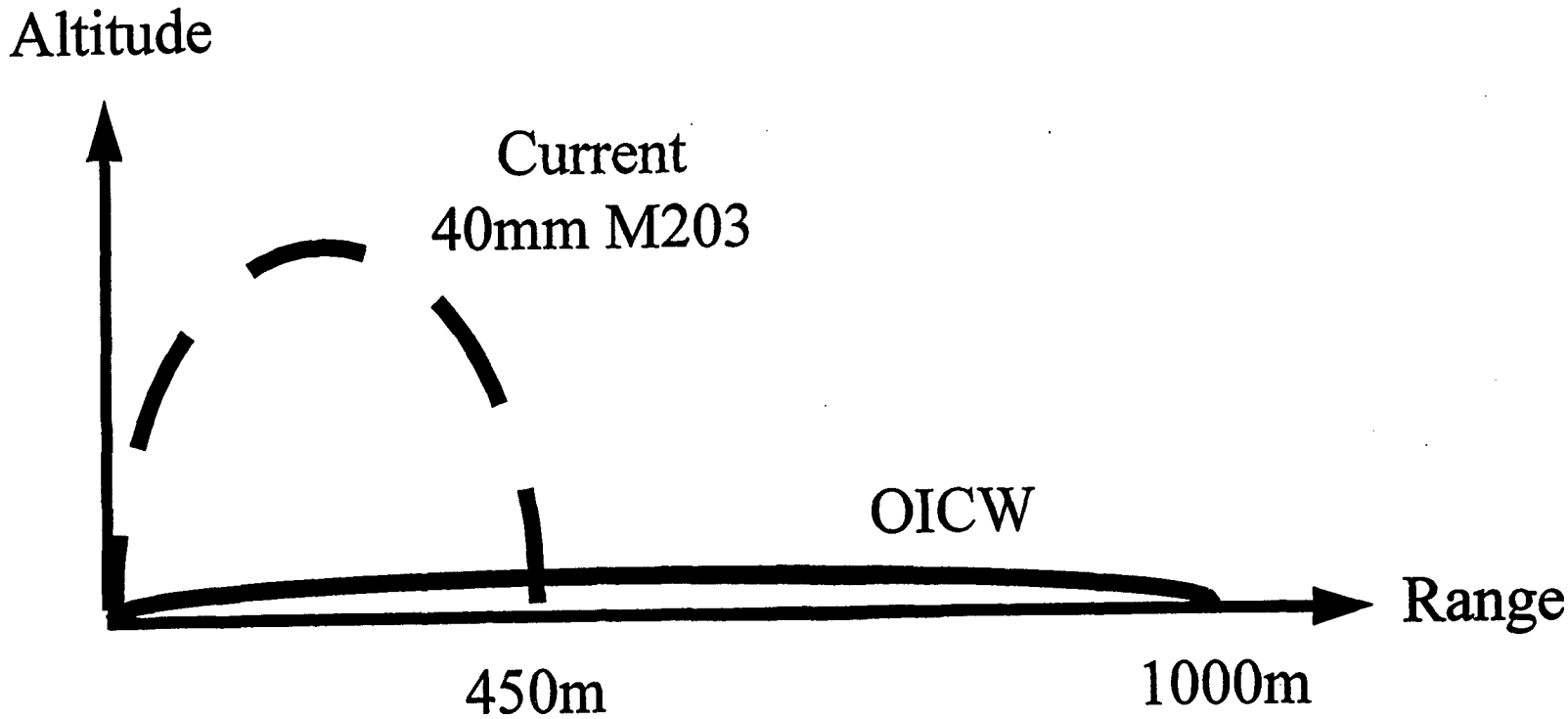
OICW



- Air Burst Over Target
- Max Range 1000 meters (HE & KE Munitions)



OICW Extends Effective Range with Flat Trajectory



OICW The Leap Ahead Solution

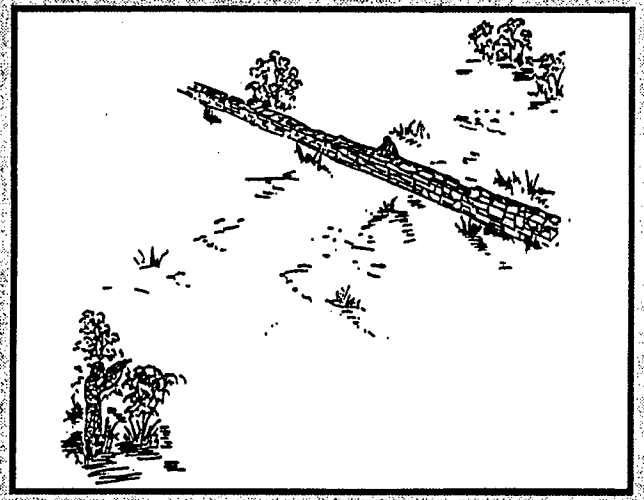
HUGHES Olin

AIR BURSTING MUNITION/ OICW SYSTEM APPROACH

J.S.S.A.P. JOINT SERVICE SMALL ARMS PROGRAM

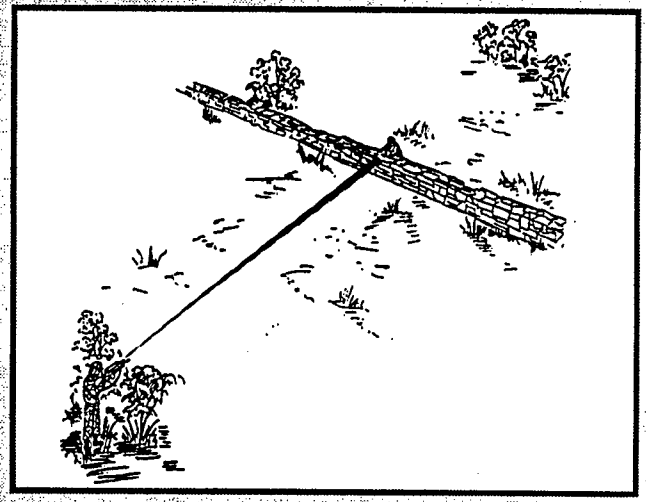
Fire Control Improves Detection/Aiming

1



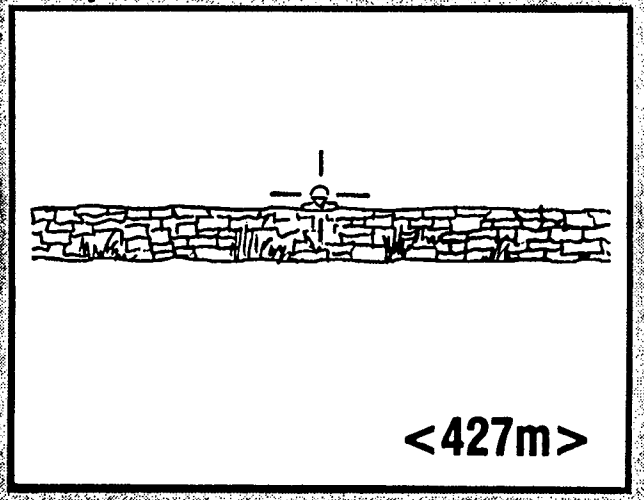
Obtain Range via Laser Range Finder

2



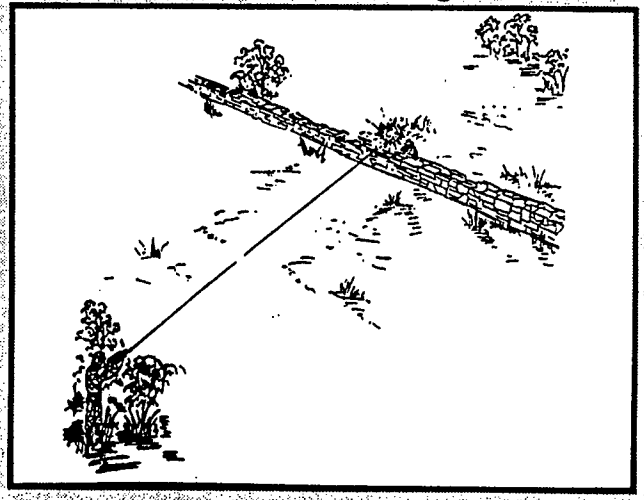
Compute Ballistic Solution & Set Fuze

3

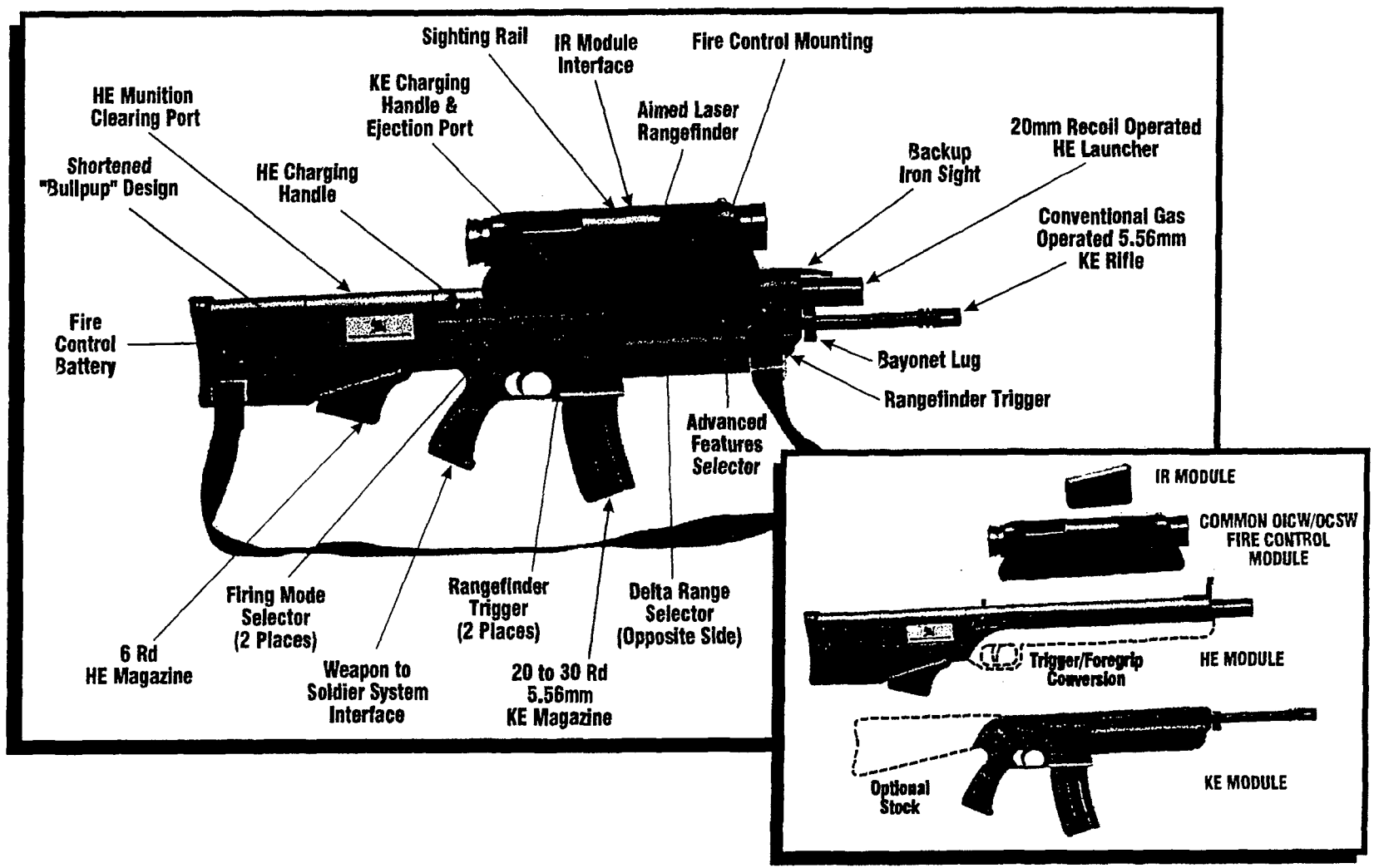


Airburst at Range

4

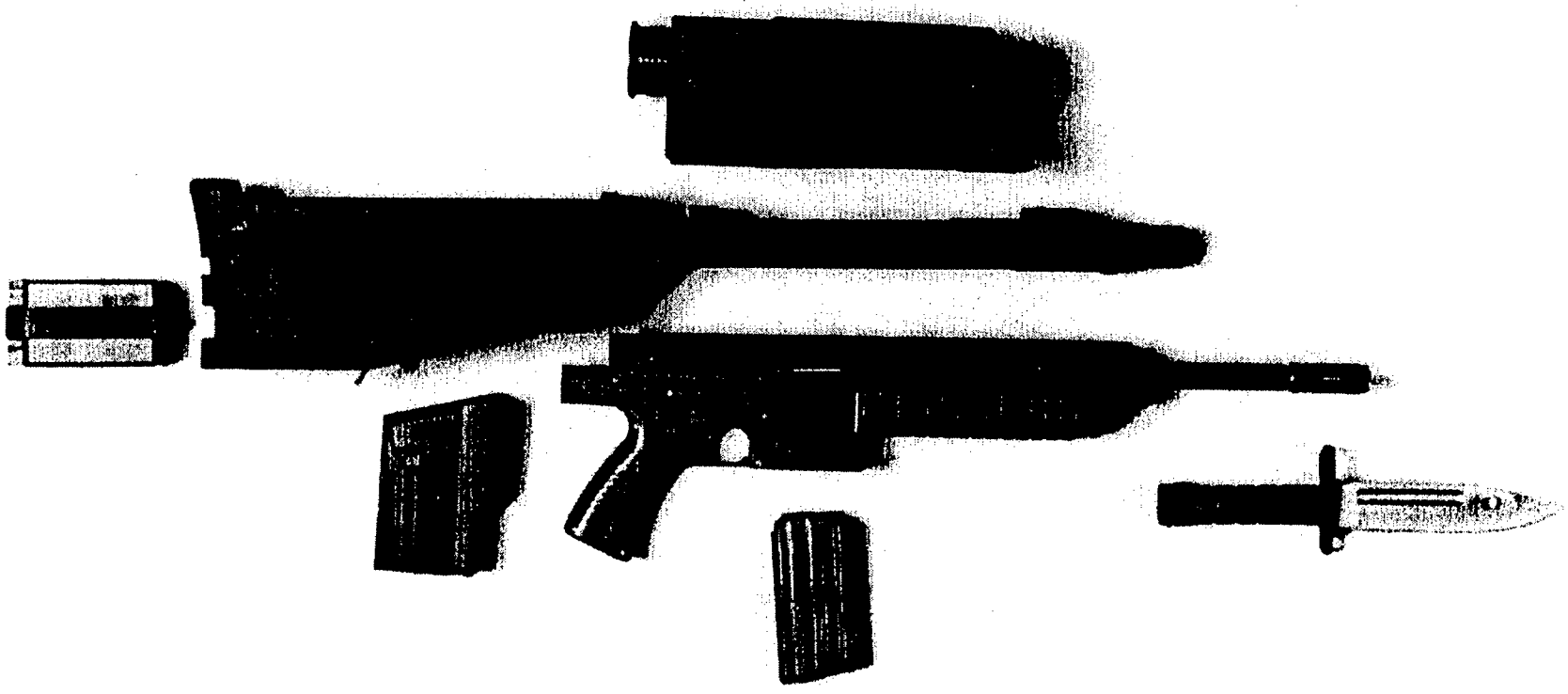


AAI OICW SYSTEM FUE DESIGN



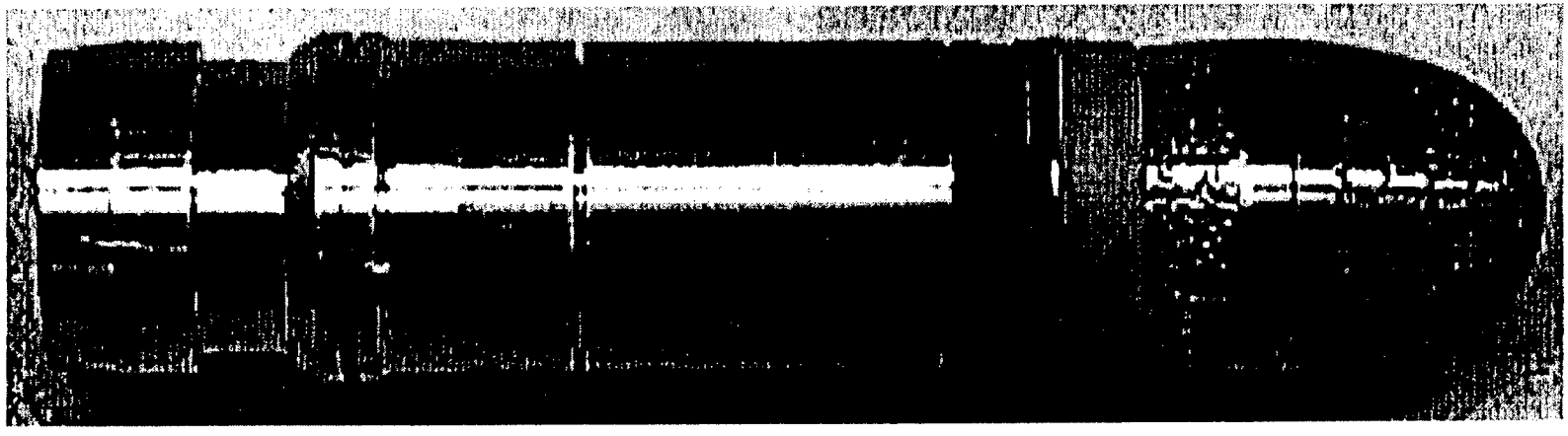


System Design Overview

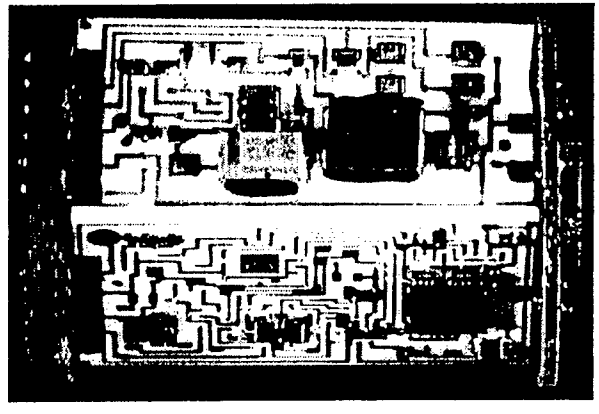


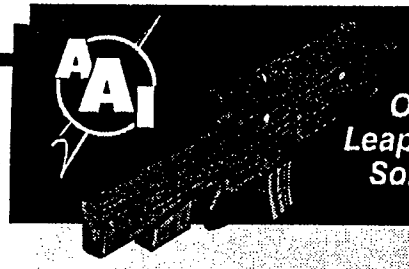


Phase III HE Ammunition



- Velocity Corrected Time Set Fuze
- Verge/Rotor S&A
- Tungsten Warhead
- Pocket Propulsion

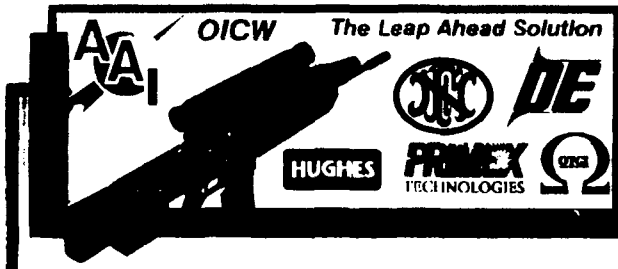




OICW
Leap Ahead
Solution

KEY OICW SYSTEM REQUIREMENTS/GOALS

		Requirement	Goal
DESIGN	Loaded Weight (lbs) Basic FCS w/IR Sensor	 18 19	 12 17
	Magazine Load (Rds) KE HE	 ≥20 ≥6	 ≥30 ≥10
PERFORMANCE	P_I (Incapacitation) Point Target Defilade Target	 ≥50% (300m) ≥20% (300m)	 ≥90% (500m) ≥50% (500m)
	P_S (Suppression) Area Target, 750m Area Target, 1000m	 Suppress Suppress	 3 Minute Suppression Suppress



Key OICW Technologies



***Advanced Fire Control System Features provide Accurate Engagement of Difficult Targets**

- *Multi-Pulse Laser Rangefinder/Modal Processing
- *Image Processing/Laser Steering

***Internal Recoil Mitigation System Provides Shoulder Force Equivalent to M14**

***Wide Angle Spray 20mm Tungsten Warhead Provides Greater Weight, Number of Frags than Current 40mm Grenade**

***Elapsed Time Fuze Provides Low Cost , Accurate Air Burst Control**

OICW
Leap Ahead
Solution

FIRE CONTROL VS. WARHEAD TRADEOFFS

Range Error is Predominant Error Source Affecting Lethality

Solutions

Warhead Enhancements

- Proportionally less lethality gain
- Increases weapon wt
- Increases recoil impulse
- Reduces effective range
- Reduces velocity / Increases Engagement Timeline
- Increases ammunition costs

FCS Error Reduction Enhancements

- Addresses difficult scenarios
- Allows optimization of weapon wt
- Provides minimum recoil impulse
- Increases effective range
- Minimizes expendible cost

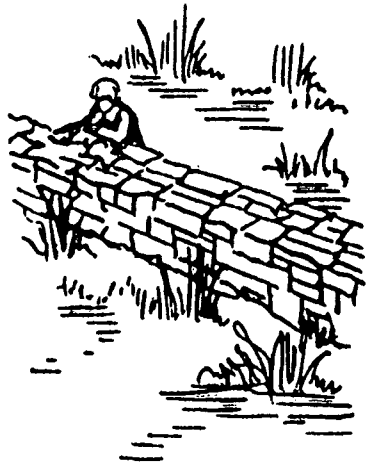


Relative Benefit of Range Error Solution

FC MUST ADDRESS REAL WORLD TARGETS



EXPOSED STATIONARY



PROTECTED



FLEETING TO CONCEALED

INCREASING PROBABILITY OF OCCURRANCE

OICW The Leap Ahead Solution

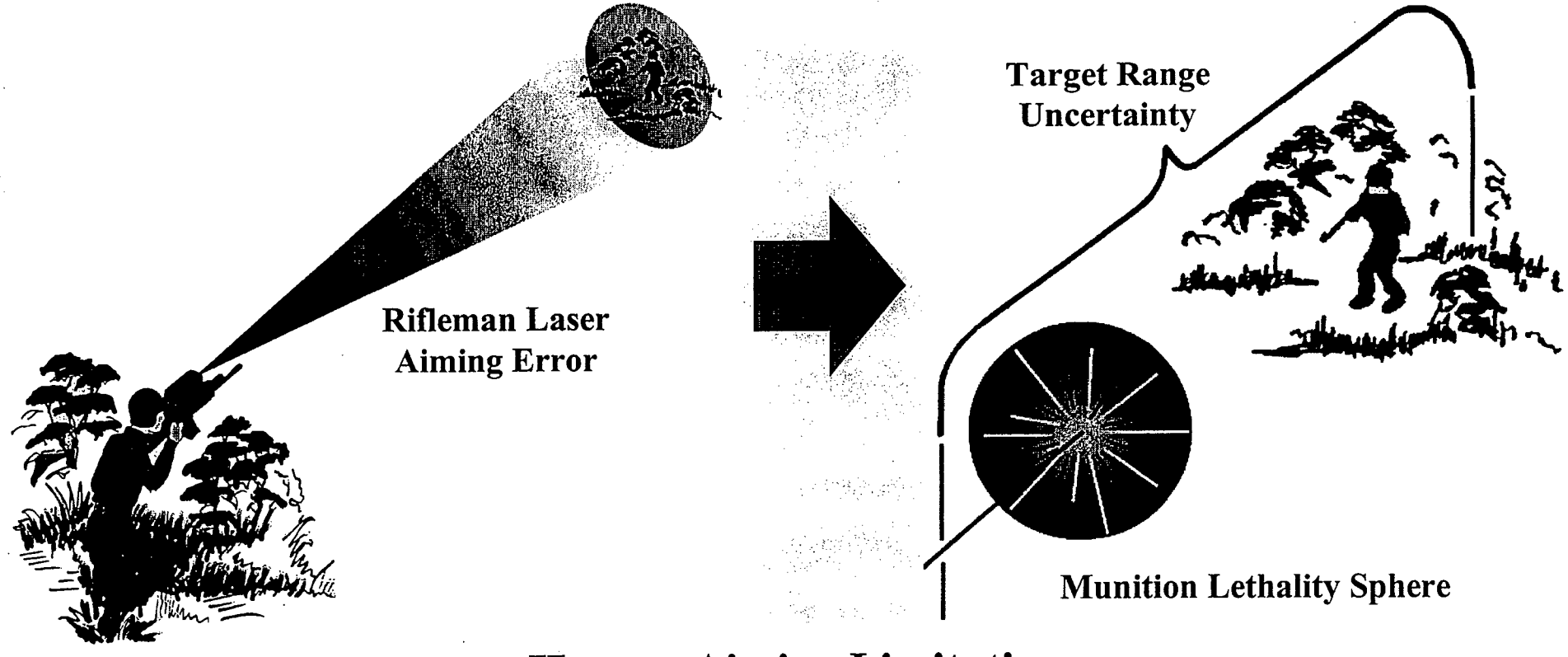
HUGHES PRIMEX TECHNOLOGIES

Airbursting System WITHOUT Auto Ranging Assist

J·S·S·A·P JOINT SERVICE SMALL ARMS PROGRAM

PROBLEM:
Target Range Error

RESULT:
Target Miss



Human Aiming Limitations:

-Response Time/Capability

-Control/Accuracy

OICW The Leap Ahead Solution

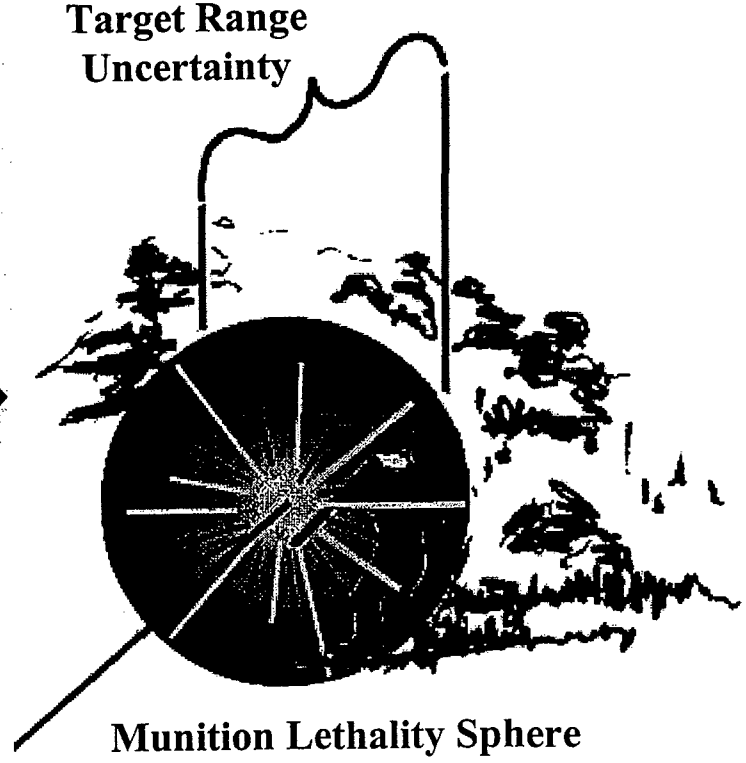
Airbursting System WITH Auto Ranging Assist

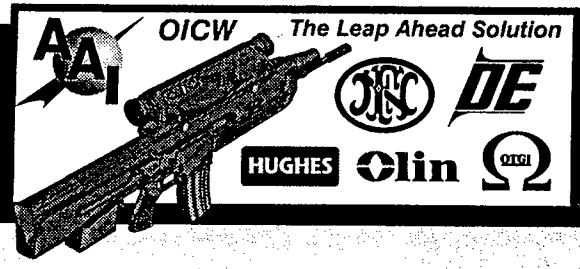
J.S.S.A.P. JOINT SERVICE SMALL ARMS PROGRAM

SOLUTION:
Laser Automatically Steered to Target



RESULT:
Target Hit

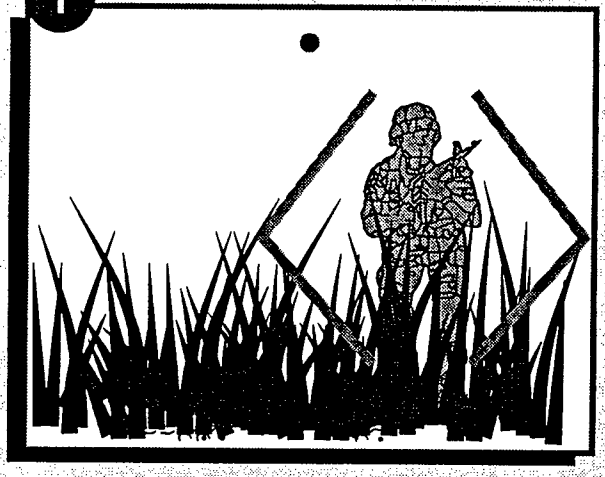




FIRE CONTROL ASSISTED LASER AIMING PROVIDES TARGET RANGES OTHERWISE UNOBTAINABLE

J.S.S.A.P. JOINT SERVICE SMALL ARMS PROGRAM

1 DETECT

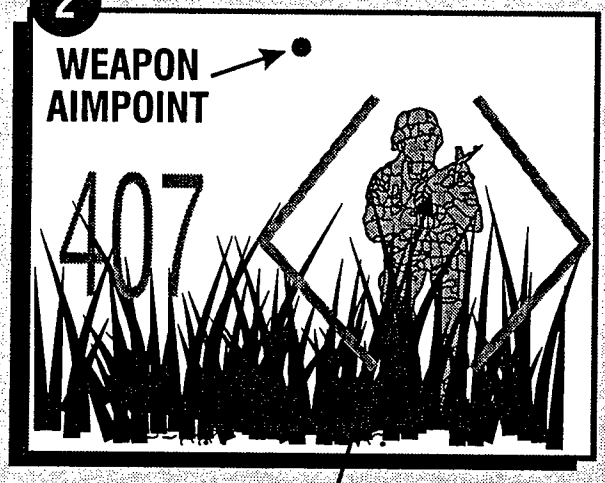


FLEETING TARGET
(3 to 6 seconds)

POINT WEAPON

FIRE CONTROL LASER AIMING & RANGING

2



LASER AIMPOINT

HIT LASE BUTTON

3 FIRE HE MUNITION



TARGET TO GROUND

AIM WEAPON, PULL TRIGGER

INFANTRYMAN ACTION

uk-14.cdr

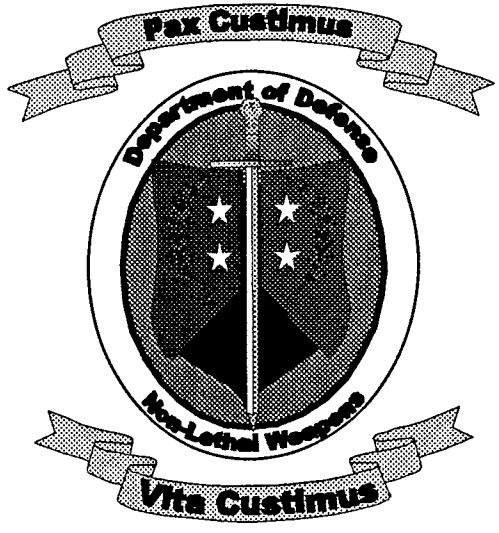


Why AAI OICW?

- Technology Innovation and Leadership
- User Focused, Performance Driven Design
- Low Risk Development/Production Team

AAI HUGHES FN PRIMEX TECHNOLOGIES DE OTK J.S.S.A.P. JOINT SERVICE SMALL ARMS PROGRAM

The U.S. Department of Defense
Joint Non-Lethal Weapons Program



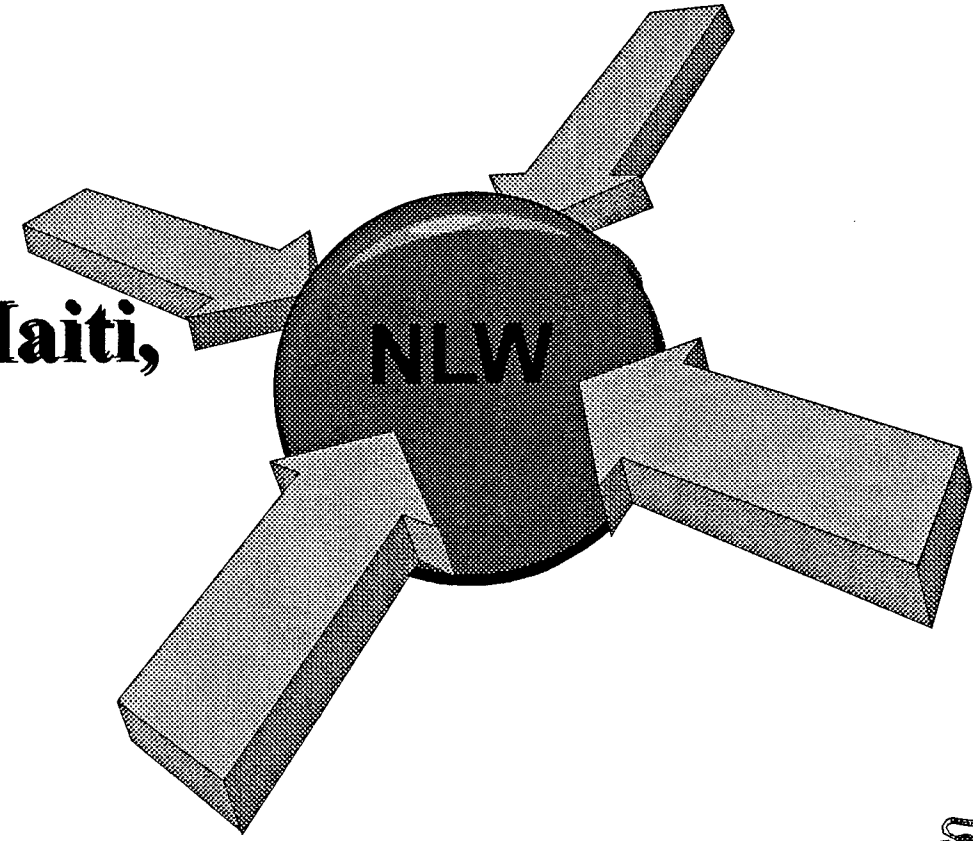
The Role of Non-Lethal Weapons
in
Military Operations

PURPOSE

To provide an overview of the role non-lethal weapons have played and might play in military operations

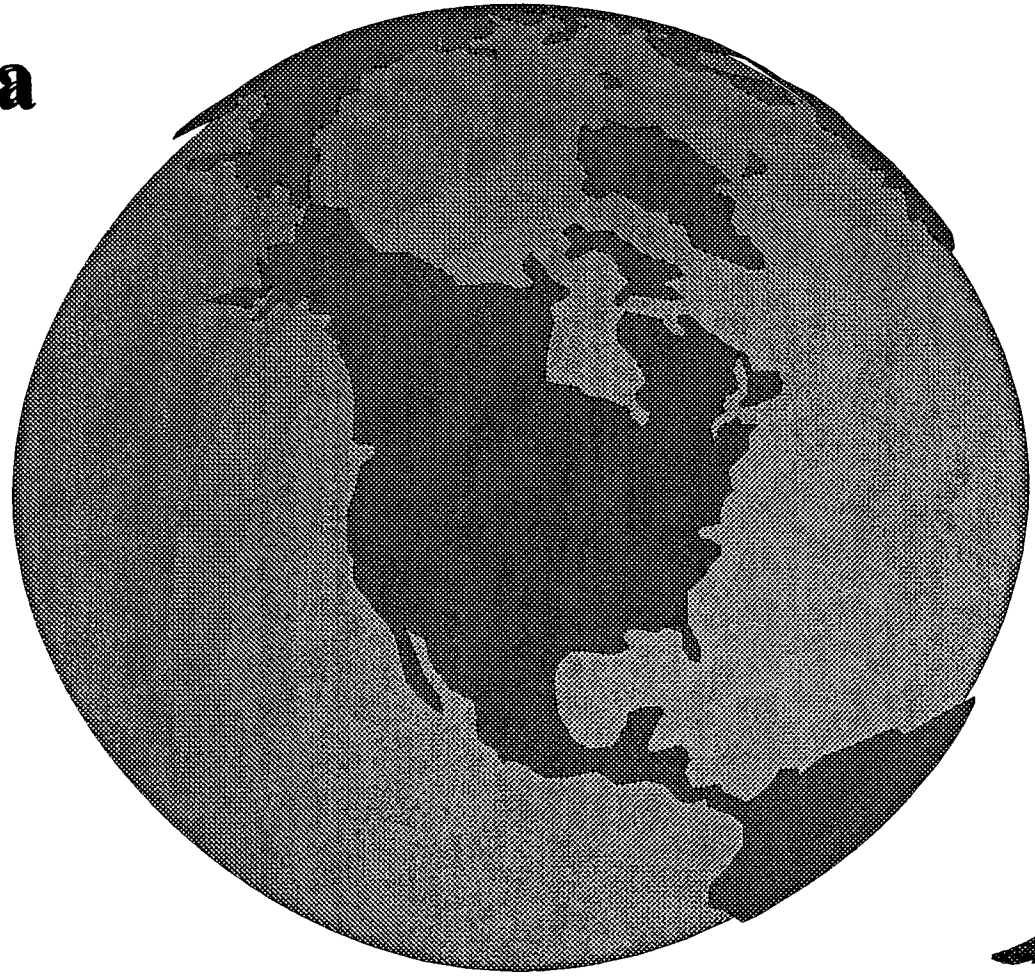
Where We Came From

- 1970/80's many disjointed efforts
- 1990's: Somalia, Haiti, Bosnia
- General Zinni
- Congress & OSD



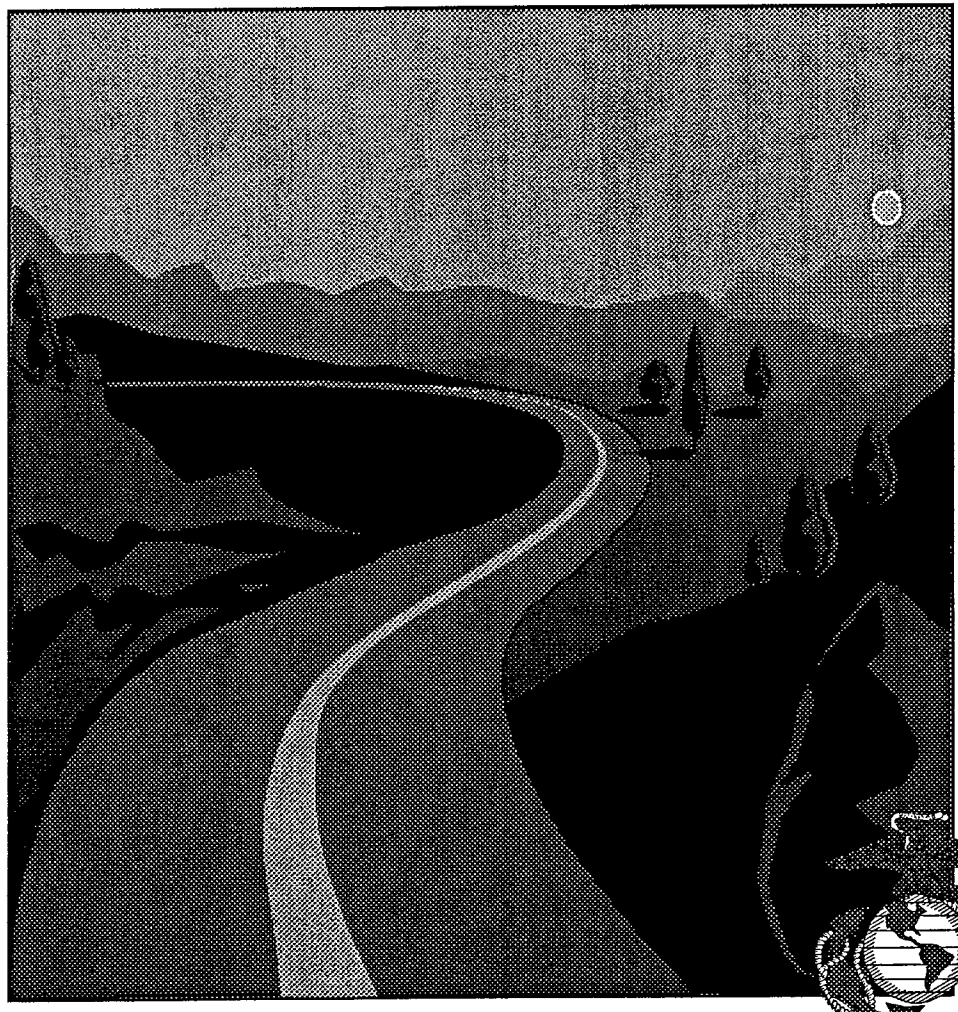
The Real World

- Haiti/Bosnia
- Iraq
- Panama ?
- Cuba ?
- NEOs ?



Where We Are Headed

- A joint, coordinated and focused effort
- Oriented toward more rapid fielding
- Blend of low tech, near-term with high tech, long range



BOSNIA LESSONS

- ✓ **Level of knowledge in theater**
- ✓ **Highly charged, political environment**
- ✓ **Available munitions/Other NL options**
- ✓ **Tactical employment concepts**
- ✓ **Sticky foam**

Rules of Engagement - NLWs

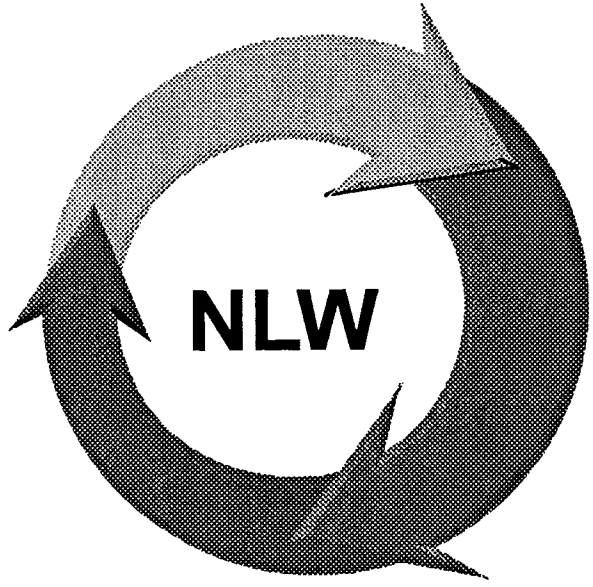
"Emerging Concepts"

- RCAs can not be addressed separately
- No such thing as 100% non-lethality
- NLWs always backed by lethal force
- Availability does not limit commander
- Need to define term "measured response"
- Force protection primary consideration

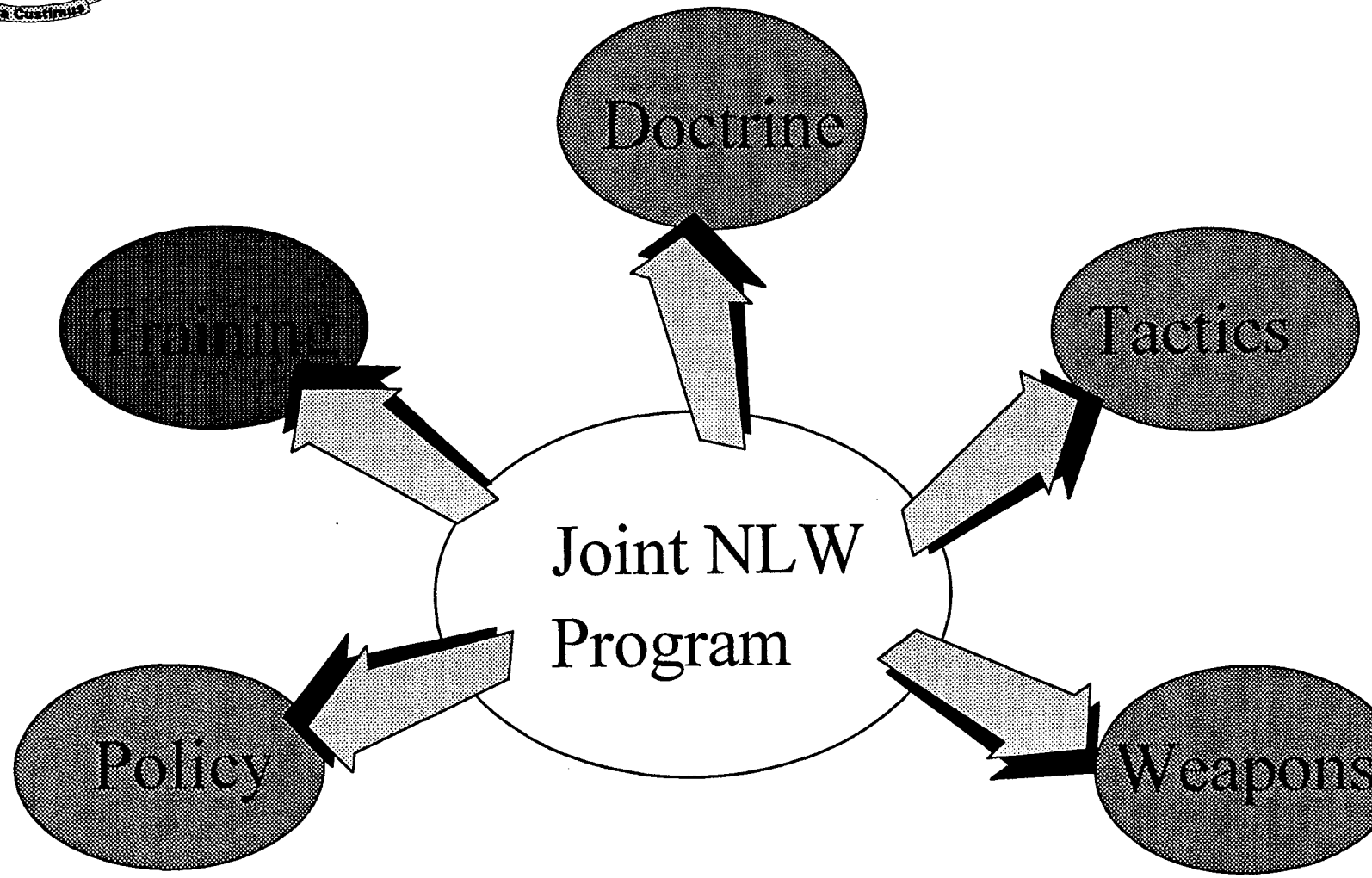


The ROE Challenge

- Non-lethal vs lethal
- Tactical vs strategic
- Assist vs restrict



The NLW "Environment"



The Joint NLW Concept

"Guiding Principles"

- **Leverage High Technology**
- **Enhance Operations**
- **Augment Deadly (Lethal) Force**
- **Provide Rheostatic Capability**
- **Focus on Tactical Applications**
- **Expeditionary**
- **Acceptable**
- **Reversible Effects**

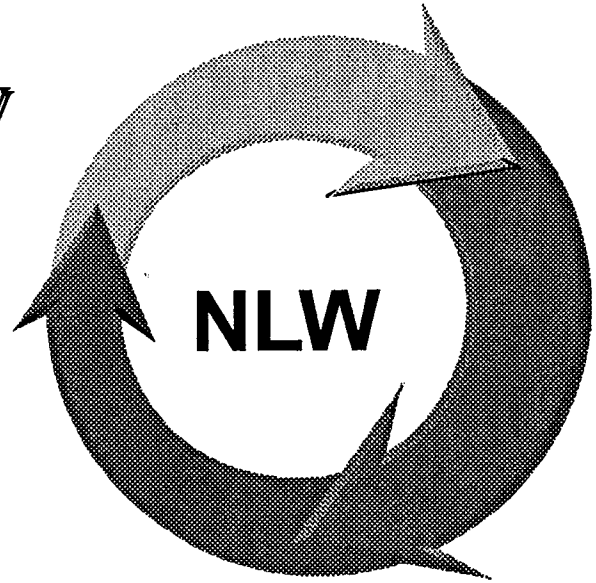
The Joint NLW Concept

"Core Capabilities"

- **Counter-Personnel**
  - **Crowd Control**
  - **Incapacitate Individuals**
  - **Deny Access**
  - **Clear Facilities/Structures**
- **Counter-Materiel**
  - **Area Denial (land, sea and/or air space)**
  - **Disable/Neutralize Equipment or Facilities**

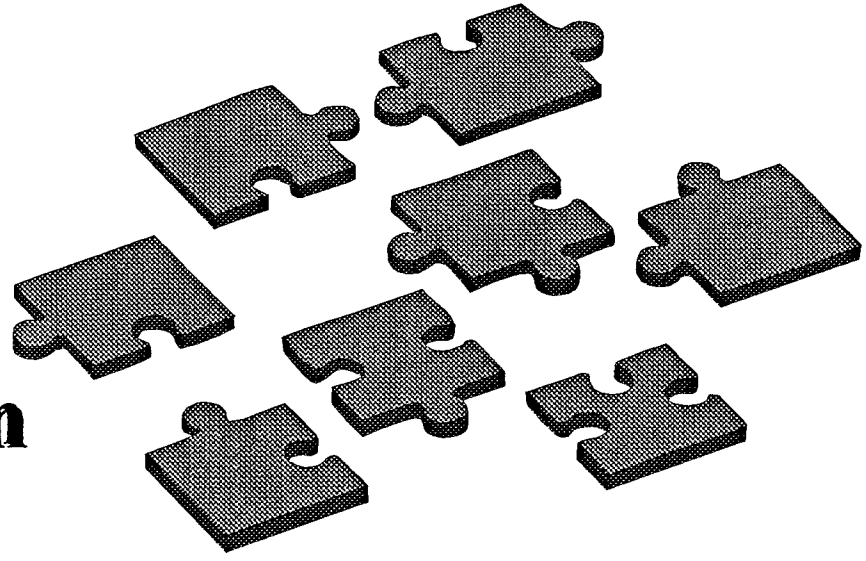
Current NLW Objectives

- Flesh out MEU Sets
- Continue contingency support
- Formalize training concept
- Meet or beat fielding timelines
- Realize a sea-based NL strike capability



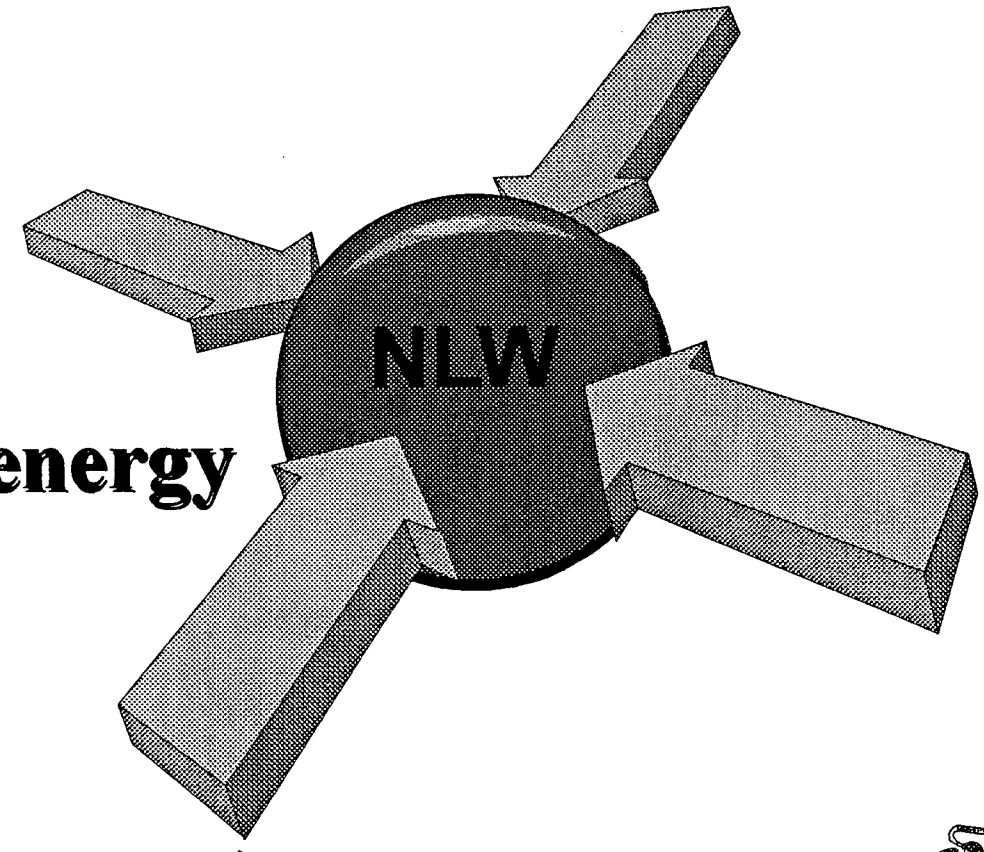
Non-Lethal Weapons Research & Development

- **Funded Projects**
- **Experimentation**
- **Modeling/Simulation**
- **Tech Investment**

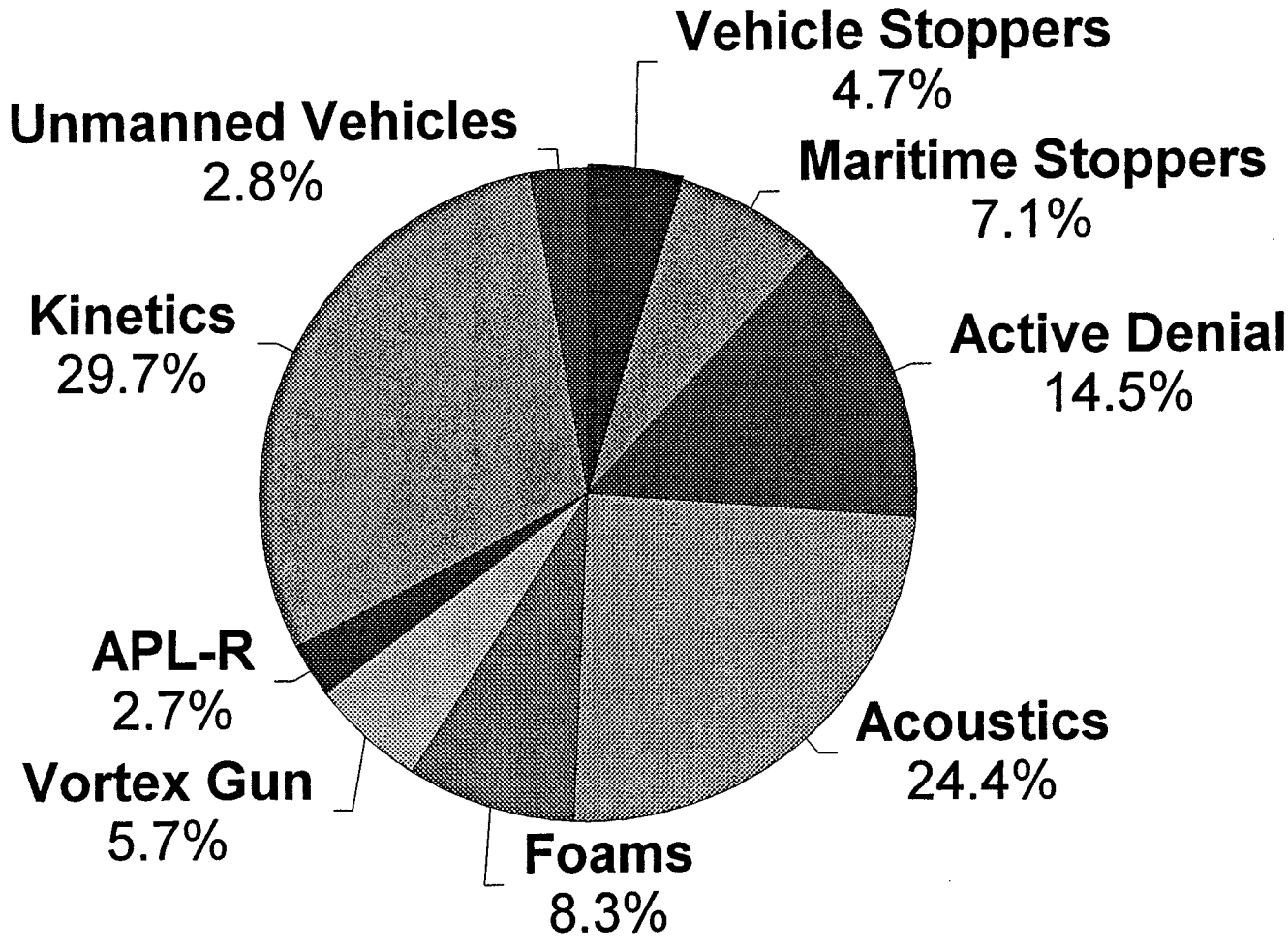


The Technology

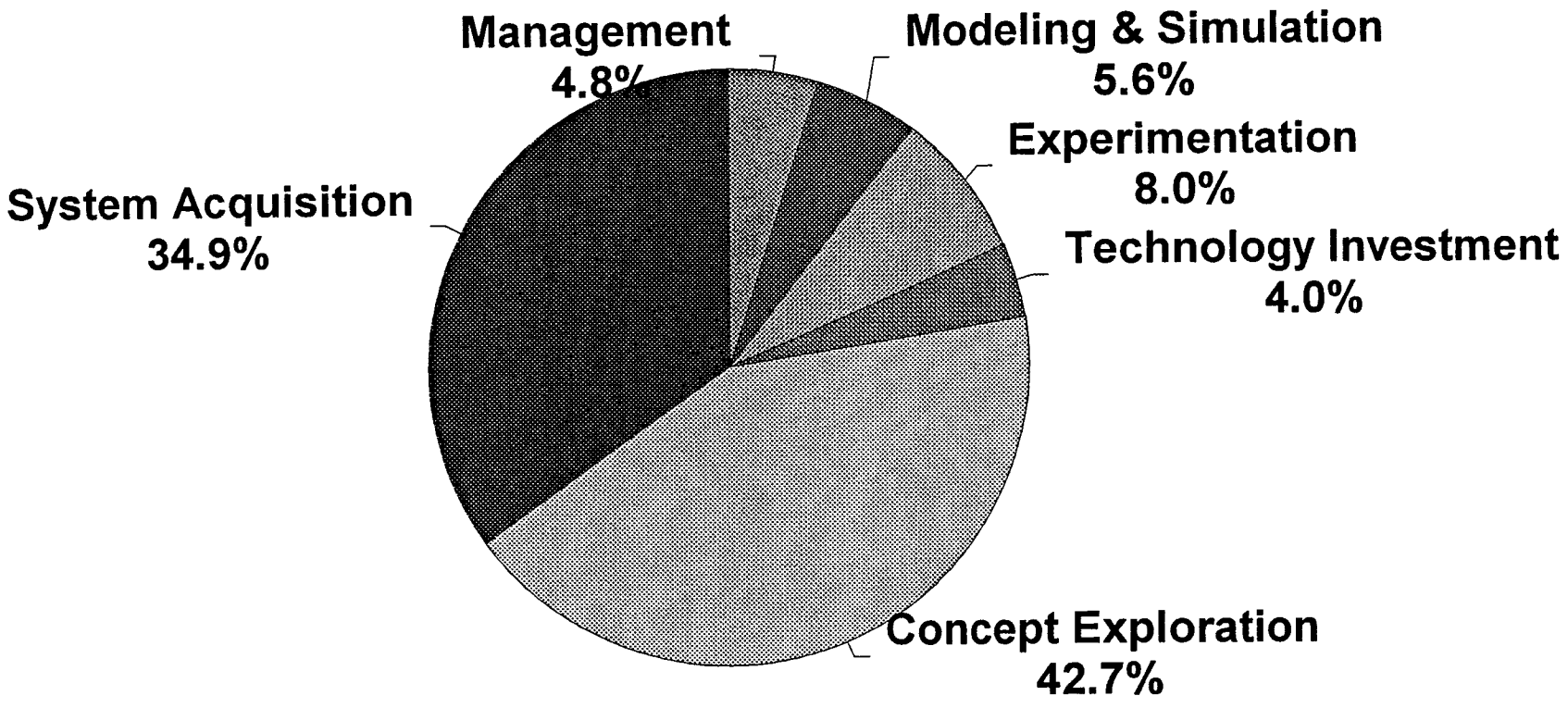
- Kinetic energy
- Acoustic energy
- Electromagnetic energy
- Chemicals/RCAs
- Other (IW, C2W, lasers)



Technology Breakout

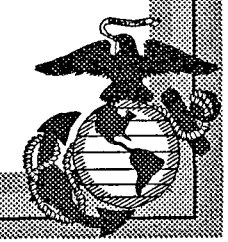


Year 2000 Funding Overview



Joint Services NLW Training

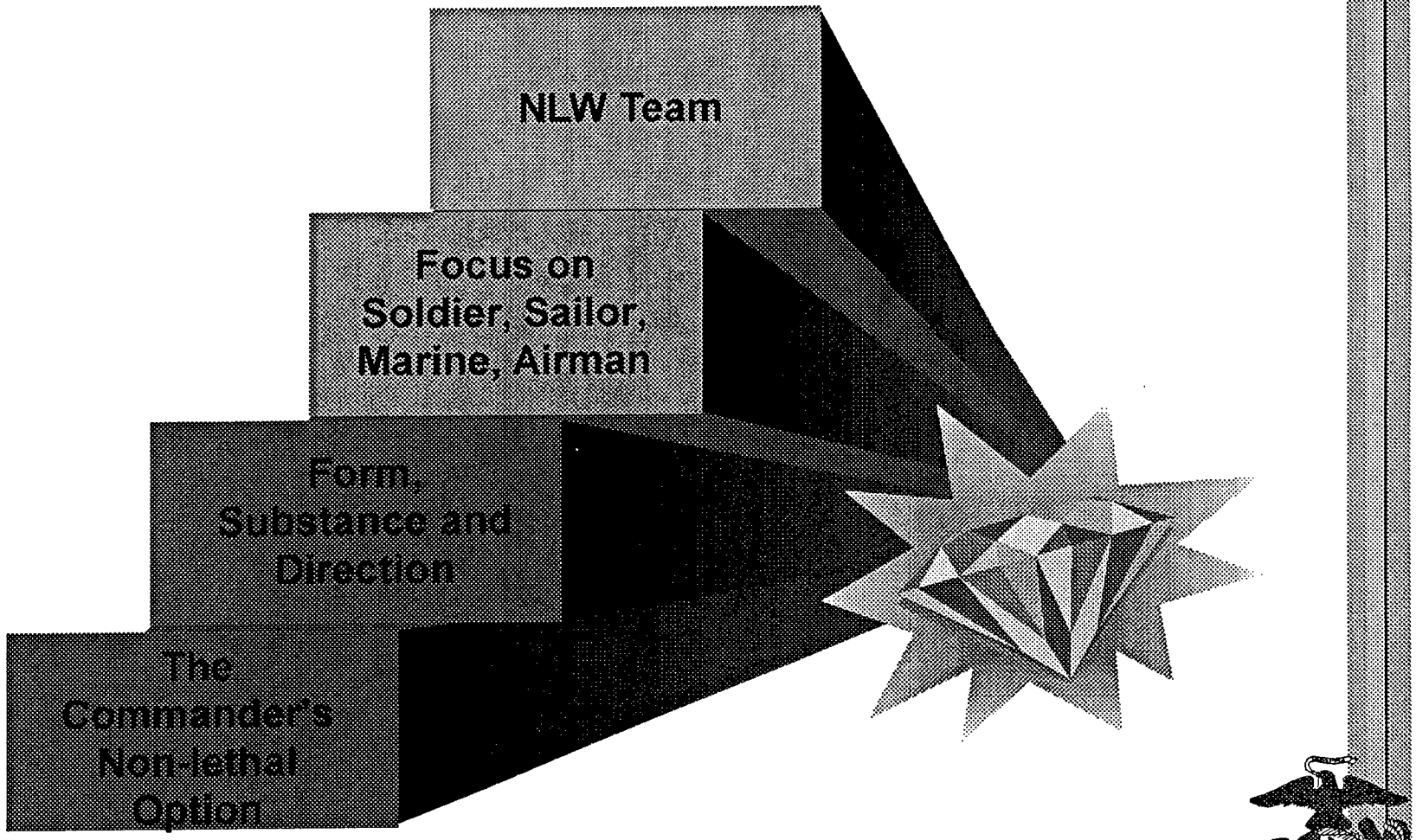
- Builds on past experience
- Recognizes individual Services' training requirements
- Comprehensive NL training package for resident trainerand user course, and mobile training capability
- Training includes tactics, communications, crowd dynamics, weapons/munitions, and rules of engagement



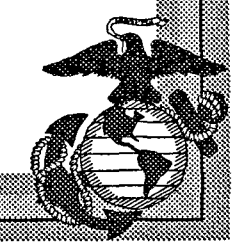
Other NLW Initiatives

- DOD NLW Web Site
- DOD NLW Database
- Human Effects Advisory Board
- Co-sponsor NLWD II Conference (2/98)
- Foreign Information Exchange

Summary


NLW Team
Focus on Soldier, Sailor, Marine, Airman
Form, Substance and Direction
The Commander's Non-lethal Option

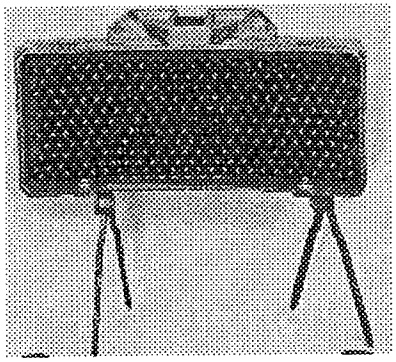
QUESTIONS ?



BACK-UP PROJECT SLIDES



Modular Crowd Control Munition (MCCM)



Objective:

To field a nonlethal system for incapacitating personnel with an area coverage of stinging rubber balls using an existing claymore mine dispenser.

Payoff:

Provides a less-than-lethal means to break up large groups of hostile personnel. Capable of mounting on vehicles with special mounting brackets.

Approach:

-Transition Technology to PM-MCD

-Joint Service ORD

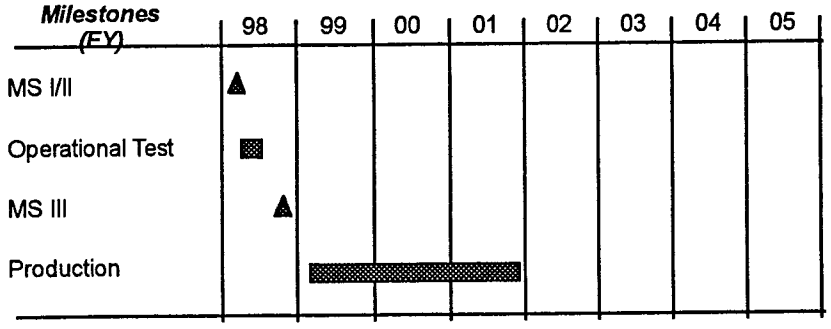
-Operational Test

-MS III (Type Classification)

-Production Contract

Name: Mr. Joe Restaino
Org: Program Manager, Mines, Countermines and Demolitions
Phone: (C) (973) 724-6058
(DSN) 880-6058
Fax: (973) 724-3669

Schedule

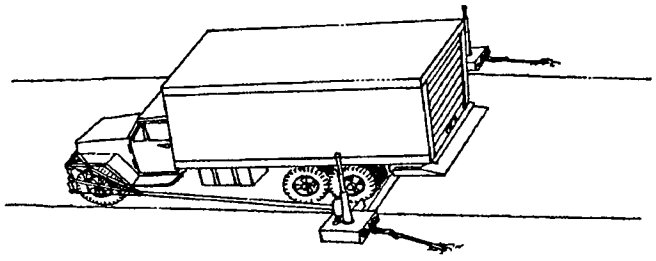


Funding ($K):

EMD	1,130				
Production					
US Army		1,000	2,500		
USMC/USAF			TBD	TBD	

Director, Joint Non-Lethal Weapons

Speed Bump



Objective:

To field a "vehicle immobilizer" system that can be used to stop a 5,100 pound wheeled or tracked vehicle traveling at 40-60 mph trying to run a barrier. The objective is to stop the vehicle within 200 feet without fatalities or serious injury to the vehicle or occupants.

Payoff:

Provides a capability to control vehicle access and movements where lethal response is not authorized. Can be used to prevent use of a bridge or other choke point or to channelize traffic.

Approach:

-Proof-of-Principle Demonstration

-Joint ORD

-Transition to PM-MCD

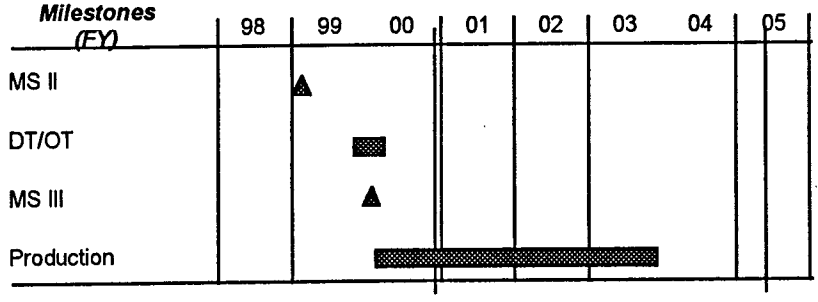
-MS II Decision

-Combined DT/OT

-MS III (Type Classification)

Name: Mr. David Millette
Org: ARDEC, Picatinney, NJ
Phone: (C) (973) 724-6246
(DSN) 880-6246
Fax: (973) 724-7068

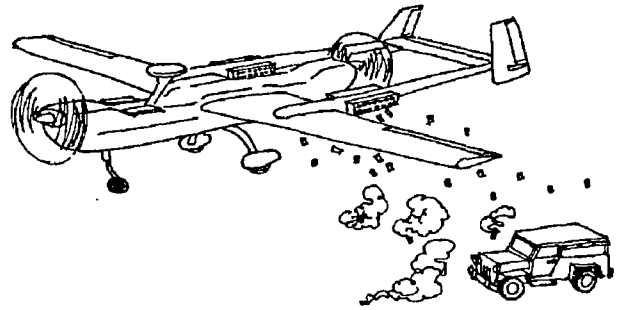
Schedule



Funding ($K):

EMD	1,000	1,700
Production		
US Army		TBD
USMC/AF		TBD

UAV Delivery System and NL Payloads



Objective:

To develop and field a UAV NL payload delivery system with a family of nonlethal munitions. The system will be used to neutralize dangerous situations with minimal risk to ground forces. The anticipated nonlethal payloads include riot control agents and pyrotechnics.

Payoff:

Provides a long-range delivery means to deploy nonlethal irritants to affect large crowds in a MOUT environment.

Approach:

-Field demonstrations (up to five other payloads)

-Downselect submunitions

-Transition to EMD Phase

-Operational test

-MS III (Type Classification)

-Production Contract

Name: Mr. Mike Abaie
Org: NSWC Dahlgren, VA
Phone: (C) (540) 653-2719
(DSN)
249-2719
Fax: (540) 653-2687

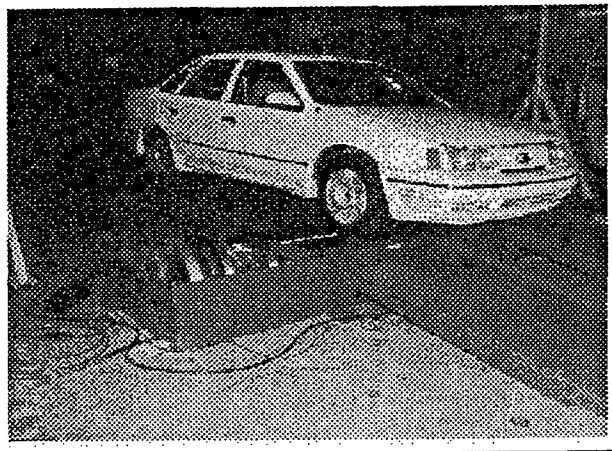
Schedule

Milestones (FY)	98	99	00	01	02	03	04	05
Field Demo	■							
MS I/II		▲						
Transition of EMD			▲					
Operational Test			■					
MS III				▲				
Production					■	■		

Funding ($K):

Conc. Exp.	600						
DemVal							
EMD			1,100	1,000	1,000		
Production							
US Army						TBD	
USMC						TBD	
US NAVY						TBD	

Ground Vehicle Stoppers (GVS)



Objective:

To design, build, and demonstrate the capability to generate and deliver electromagnetic radiation at high-power levels from a mobile or ground-based microwave source that can be used by military personnel to selectively stop moving vehicles without causing permanent damage or injury to personnel.

Payoff:

Provides the capability to immobilize vehicles by burning out the electronic components and by interfering with communications.

Approach:

-Static tests

-Joint ORD

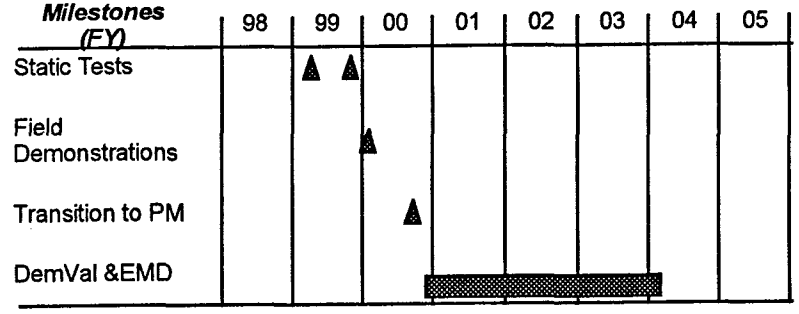
-Develop prototype

-Field demonstration

-Transition to a PM

Name: Mr. Mark D. Berry
Org: Army Research Lab
Phone: (C) (301) 394-1228
(DSN) 290-1228
Fax: (301) 394-2525

Schedule

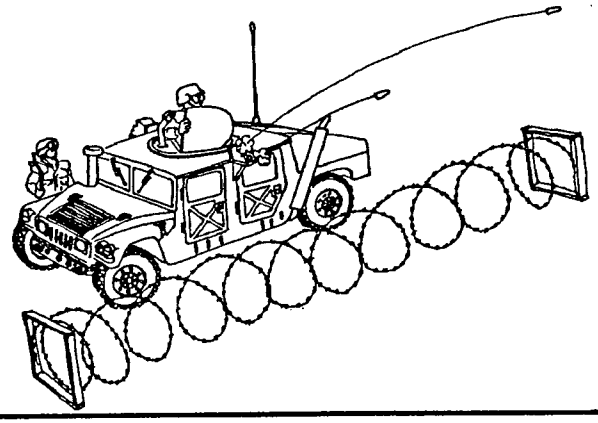


Funding ($K):

	98	99	00	01	02	03	04	05
Conc. Exp.	1,050	1,200	825					
PD/RR				525				
EMD						600	600	
Production								
US Army/USMC/USN							TBD	

Director, Joint Non-Lethal Weapons

66mm Systems



Objective:

To field a riot control capability that can be used at standoff distances from current vehicle-mounted launchers. This effort incorporates riot control grenade alternatives into the design of the current 66mm smoke grenade. Two nonlethal cartridges, a "stingball" and a "flash bang" distraction round, are being considered.

Payoff:

Provides long range, indirect-fire munitions that can be used to apply the minimum force necessary for crowd control and site and area security missions.

Approach:

-Technology Demonstration

-MS I/II Decision

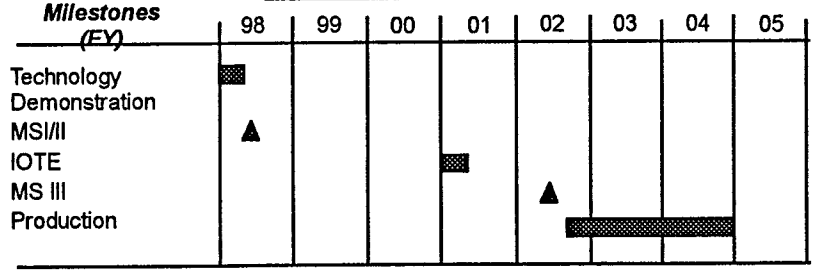
-User Evaluations

-Operational test

-MS III Type Classification

Name: Mr. Marty Sennet
Org: ERDEC, Edgewood, MD
Phone: (C) (410) 671-2139
(DSN) 584-2139
Fax: (410) 671-

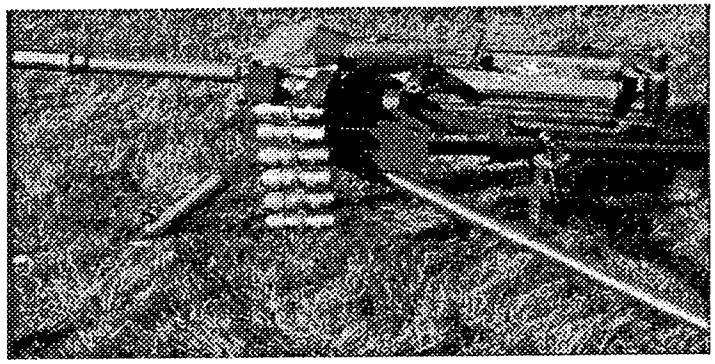
Schedule



Funding ($K):

	98	99	00	01	02	03	04	05
Conc. Exp.								
PD/RR								
EMD		640	600	1,700	1,125	1,000		
Production								
US Army							TBD	
USMC							TBD	
US Air Force								

Vortex Ring Gun (VRG)



Objective:

To design, build, and successfully demonstrate the capability to produce combustion-driver, ring vortices from the standard MK19 Genade Machine Gun that will deter and disorient hostile individuals or crowds. The effort includes integration of concussion, flash, chemical, and impulse methods into a single delivery system capable of being focused onto a specific individual.

Payoff:

Provides a means to incapacitate a targeted individual with controlled, directed vortices.

Approach:

-Propellant, Nozzle, Injector Tests

-Define Critical Parameters

-Construct Prototype Hardware

-Target Effects Tests

-Field Demonstration

-Transition to PM

Name: Mr. George Lucey
Org: Army Research Lab
Phone: (C) (301) 394-4342
(DSN) 290-4342
Fax: (301) 394-1416

Schedule

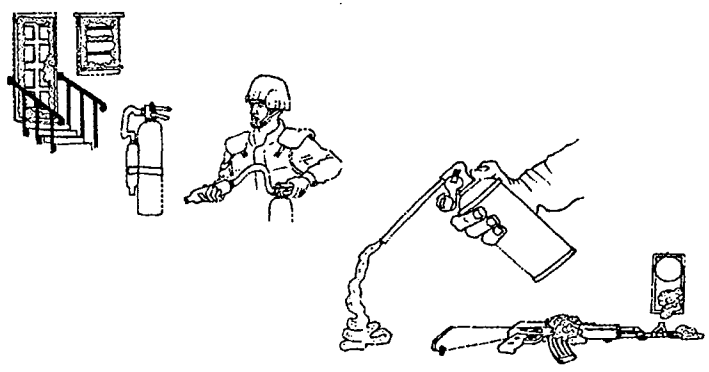
Milestones (FY)	98	99	00	01	02	03	04	05
Laboratory Test	■							
Prototype Hardware	▲							
Field Demonstration		■						
Transition to PM		▲						

Funding ($K):

Conc. Exp.								
PD/RR	458	500	1,000	1,245	1,000	1,000	500	800
EMD								
Production (TBD)								

Director, Joint Non-Lethal Weapons

Foam Applications



Objective:

To field a new dispensing system (hand-held or shoulder-slung) and rigid foam material (with strong adhesive and cohesive properties) that can be used in a variety of applications such as area denial (sealing of building entrances) and anti-materiel applications (disable materiel such as small arms).

Payoff:

Provides a means seal doors and windows in order to deny access to riotous personnel in MOUT environments. Also may provide capability to deactivate anti-personnel mines.

Approach:

- Warfighting Laboratory Experiment (MCWL)
- Optimization of System Properties
- MS I/II Decision
- DT/ OT
- MS III Decision
- Follow-on Efforts (Other type foams)

Name: Mr. Larry Bickford
Org: ERDEC, Edgewood, MD
Phone: (C) (410) 671-2231
(DSN) 584-2231
Fax: (410)-671-2748

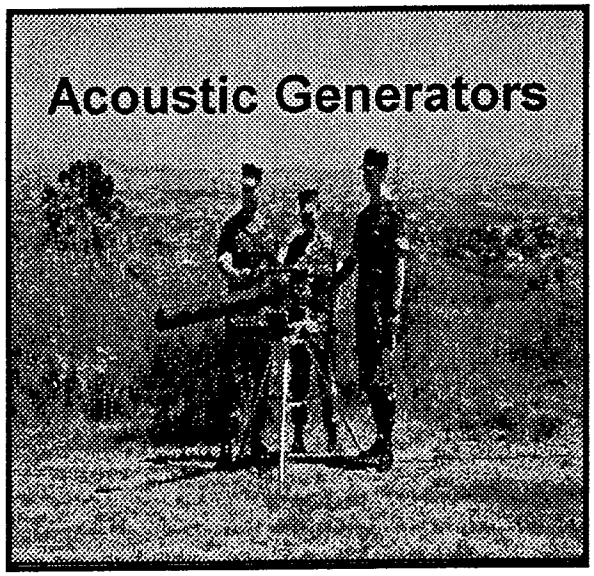
Schedule

Milestones (FY)	98	99	00	01	02	03	04	05
Battle Lab Experiment	▲							
Optimization Effort		▬						
MSI/II			▲					
DT/OT				▬				
MS III					▲			
Additional Applications					▬			

Funding ($K):

Conc. Exp.	300	198				
PD/RR						
EMD			1,470	1,200	200	
Production						
US Army /USMC/USAF				TBD	TBD	

Acoustic Generators



Objective:

In conjunction with the Acoustics Bio-Effects program, this effort will initiate limited design, fabrication, and testing of a combustion driven prototype system that can be used to direct the energies away from the user and aimed towards a crowd.

Payoff:

The human physiological response to the various anti-personnel acoustic phenomena must be understood and appropriate safety analysis completed prior to decisions to proceed with the development of accurate weapon. Early prototype design will support this analysis.

Approach:

-Preparation of Test Reports (from FY97/98 effort)

-Acoustics Program IPR (Go/No-Go Decision)

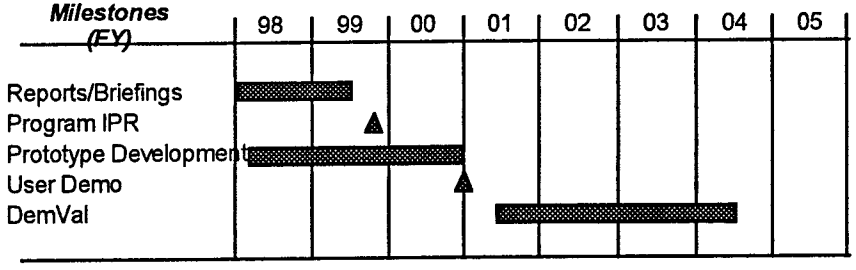
-Design/Fabricate Prototype

-User Demonstration

-Transition to PD/RR

Name: Mr. Harry Moore
Org: ARDEC, Picatinney, NJ
Phone: (C) (973) 724-7932
(DSN) 880-7932
Fax: (973) 724-3793

Schedule

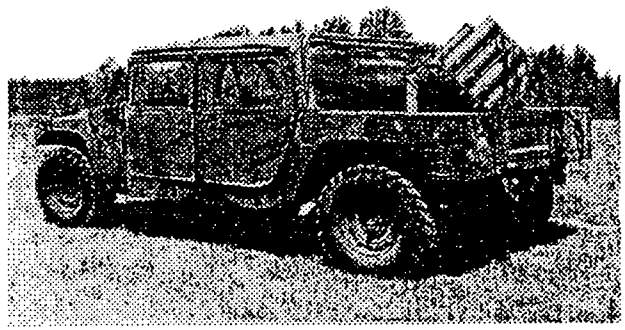


Funding ($K):

	98	99	00	01	02	03	04	05
Conc. Exp.	500	700	4,300					
PD/RR				6,340	7,420	7,920	10,400	
EMD								10,400
Production (TBD)								

Director, Joint Non-Lethal Weapons

Canister Launched Area Denial System (CLADS)



Objective:

To field an area denial system that creates a rapidly deployed concertina-type barrier/deterent that is fired from the Volcano Mine Dispenser at stand off distances.

Payoff:

Provides a temporary barrier using concertina wire (or an alternate payload) across the entrance to a compound or a road to prevent the free flow of individuals and vehicles.

Approach:

-Concept Evaluation Program

-MS I Decision

-Transition to PM-MCD for DemVal

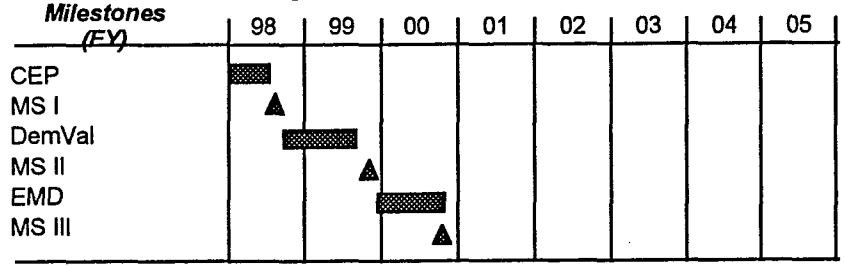
-MS II Decision

-EMD Phase

-MS III (Type Cassify)

Name: Mr. David Millette
Org: ARDEC Picatinney, NJ
Phone: (C) (973) 724-6246
(DSN) 880-6246
Fax: (973) 724-7068

Schedule

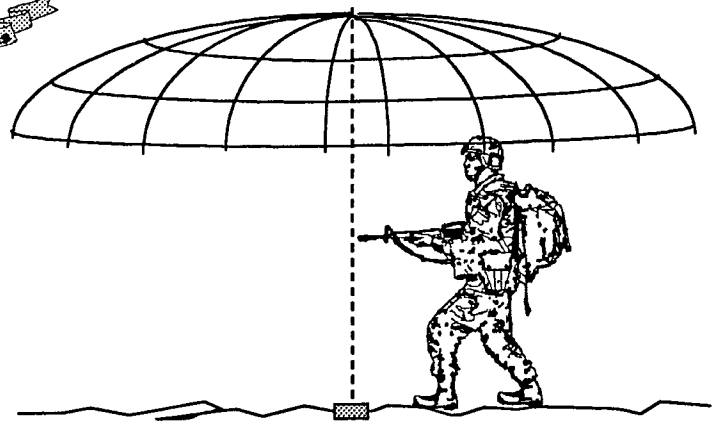


Funding ($K):

	98	99	00	01	02	03	04	05
Conc. Exp.								
PD/RR	1,260							
EMD		1,000	1,550					
Production								
US Army					4,300	4,300		
USMC/USAF					TBD	TBD		

Director, Joint Non-Lethal Weapons

Bounding NL Munition



Objective:

To field a nonlethal munition for site security and perimeter defense that functions similar to the tactical bounding APERS mine. Potential immobilization technologies include malodorous substances, riot control agents, and entanglement nets.

Payoff:

Provides a nonlethal payload from a tactical bounding anti-personnel munition.

Approach:

-Proof-of-Principle Demonstration

-Down-select payload

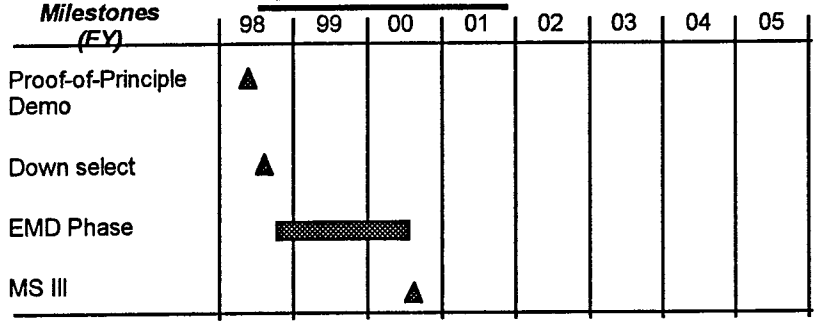
-Milestone I/II Decision

-EMD Phase

-Milestone III (Type classify)

Name: Ms. Doreen Chaplin
Org: Program Manager Mines Countermines and Demolitions
Phone: (C) (973) 724-7573
(DSN) 880-7573
Fax: (973) 724-3669

Schedule

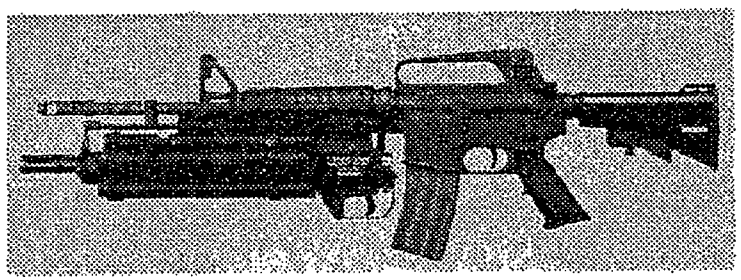


Funding ($K):

	98	99	00	01	02	03	04	05
Conc. Exp.								
DemVal	950							
EMD			1,600	500				
Production								
US Army/USMC/USAF					TBD			

Director, Joint Non-Lethal Weapons

Under Barrel Tactical Payload System (UBTPS)



Objective:

To field a tactical NL payload delivery system that can be mounted under the barrel of the M16A2/M4 todeliver NL payloads that will temporarily incapacitate personnel

Payoff:

Provides a means for small unit leaders to temporarily incapacitate targeted individual from 20-100 meters.

Approach:

-Warfighting Laboratory Experiment (DBBL)

-Transition to PM Small Arms

-MS I/II Decision

-Operational Test

-MS III (Type Classification)

Name: Ms. Hildi Libby
Org: Army Non-Lethal team
Phone: (C) (973) 724-6053
(DSN) 880-6053
Fax: (973) 724-7068

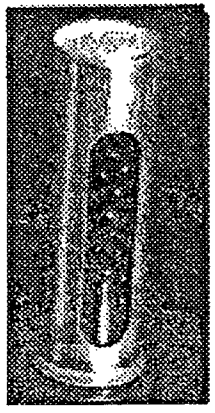
Schedule

Milestones (FY)	98	99	00	01	02	03	04	05
Battle Lab Experiment	▬							
MS I/II	▲							
Operational Test		▬						
MS III				▲				

Funding ($K):

PD/RR	340							
EMD		650	985	794				
Production								
US Army				TBD				
US Navy				TBD				

Non-lethal Crowd Dispersing Round (NCDR)



Objective:

To field a nonlethal round of munition for the M203 Grenade Launcher for crowd control and vehicle protection. The payload will be 24 rubber balls.

Payoff:

Provides a means to incapacitate a targeted individual with nonlethal blunt trauma from 10-30 meters.

Approach:

-Joint Service ORD

-RFP to industry (Performance Spec)

-Contract Award

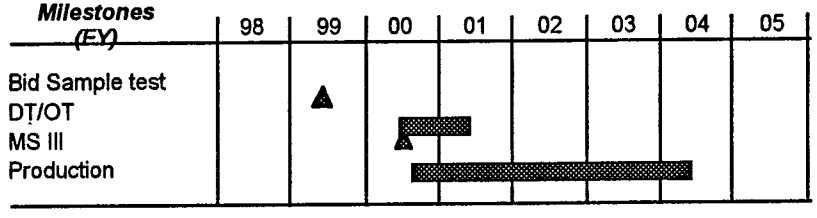
-Combined DT/OT

-MS III (Type classification)

-Production Contract

Name: Mr. Allen Li
Org: Program Manager Small Arms
Phone: (C) (973) 724-4042
(DSN) 880-4042
Fax: (973) 724-2139

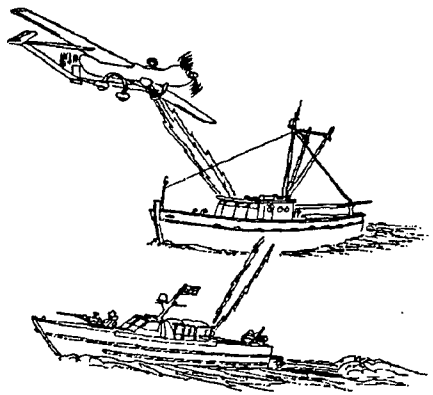
Schedule



Funding ($K):

PD/RR	60					
EMD	545	670	180			
Production						
US Army			1,600	2,000	2,100	
Others				TBD	TBD	

Maritime Vessel Stoppers (MVS)



Objective:

To design, build, and successfully demonstrate a device that will disable small inboard diesel powered surface vessels without injury to the occupants.

Payoff:

Provides friendly forces with a nonlethal method of ascertaining the intentions of personnel aboard a vessel and alleviates conflicts with ROEs and polictical constraints in addressing a situation.

Approach:

-Fleet Input

-Down select targets/concept

-Feasibility Study

-In-Progress Review (Go decision)

-Field Demonstration

-Milestone I Decision

Name: Mr. Mike Abaie
Org: NSWC Dahlgren, VA
Phone: (C) (540) 653-2719
(DSN) 249-2719
Fax: (540) 653-2687

Schedule

Milestones (FY)	98	99	00	01	02	03	04	05
Feasibility Study	▬							
Field Demo		▬						
Go Ahead Decision		▲						
Milestone I			▲					
Dem/Val			▬	▬				
Milestone II					▲			

Funding ($K):

Conc. Exp.	1,050	1,200						
PD/RR				1,250	1,500			
EMD						2,000	3,000	1,000
Production								
US Navy								

Director, Joint Non-Lethal Weapons

DynCorp

SOF PEACEKEEPING



Briefing for
NATIONAL DEFENSE INDUSTRIAL ASSOCIATION
Ninth Annual Special Operations/Low Intensity Conflict
Symposium and Exhibition
February 18, 1998

- DYNCORP IS CURRENTLY CONDUCTING ACTIVE PEACEKEEPING OPERATIONS IN EUROPE, AFRICA, AND THE CARIBBEAN.

- WE HAVE OVER 2100 EMPLOYEES SUPPORTING THE STATE DEPARTMENT, NATO, U.S. SOUTHERN COMMAND, AND THE UNITED NATIONS IN THEIR PEACEKEEPING ROLES.

- WE ARE ALSO PREPARING LOGISTICS PLANS FOR THE U.S. ARMY EUROPE IN SUPPORT OF THEIR CONTINGENCY PEACEKEEPING MISSIONS IN AFRICA

A Force Multiplier for Contingency Deployments

A Capability Which Augments Rather Than Replaces Force Structure

DYNCORP is:

An Experienced Defense Services Contractor Who Can Provide All *Pre-Planned* Logistics and Engineering/Construction Oriented *Contingency* Services in Peace or Operations Other Than War (OOTW) and War.

Which

- **Leverages DynCorp's worldwide Resources as Facility and Logistics Services Support Multipliers**
- **Provides a Rapid and Responsive Capability Which Can Augment U.S. Forces Capability by Meeting CS/CSS Requirements**
- **Can Focus On Prioritized Peacetime Contingency Planning for Augmentation Logistics and Engineering/Construction Services to Support the CINCs/ASCCs**

NARRATIVE

- DYNCORP CAN PROVIDE A VARIETY OF SUPPORT CONTRACTS. THESE CAN BE UMBRELLA CONTRACTS OR CONTRACTS WHICH FOCUS ON PRIORITIZED PEACETIME CONTINGENCY PLANNING FOR POTENTIAL AUGMENTATION LOGISTICS AND ENGINEERING/ CONSTRUCTION SERVICES AS DETERMINED BY THE CUSTOMER. THESE PROVIDE THE CAPABILITY FOR THE CONTRACTOR TO RAPIDLY DEPLOY AND EXECUTE IDENTIFIED AUGMENTATION REQUIRMENTS DURING A PEACETIME OR CONTINGENCY EVENT.

International Technical Services

Current Personnel Skills and Support Services

- P • **Angola (UN) - Full Logistics Support**
- P • **Bosnia (UN) — International Police Monitors**
- P • **Former Yugoslavia (NATO) — Full Logistics Support to SFOR**
  - **Bolivia (USAF) — Logistics and Maintenance Support to Fixed Wing Aircraft**
  - **United Arab Emirates (UAE) — Aviation Maintenance to UAEAF**
- P • **Haiti (Army) — Full Logistics Support, Including Construction, to Army Forces (Managing Partner, DBR)**
  - **Latin America (DoS) — Full Aviation and Logistics Support to Drug Suppression Operations**
  - **Contract Field Teams (USAF) — Logistics Services Support to USAF and Army Forces (Originally Aviation Oriented, Managed Through Field Services Business Unit)**

THESE NEXT TWO SLIDES SHOW THE VARIOUS CONTRACTS DYNCORP IS CURRENTLY EXECUTING. The "P" INDICATES THOSE CONTRACTS DIRECTLY TIED TO PEACEKEEPING. NOTE THE VARIETY OF TASKS AND THE DIFFERENT MISSIONS AND GEOGRAPHICAL AREAS WHERE WE OPERATE.

International Technical Services

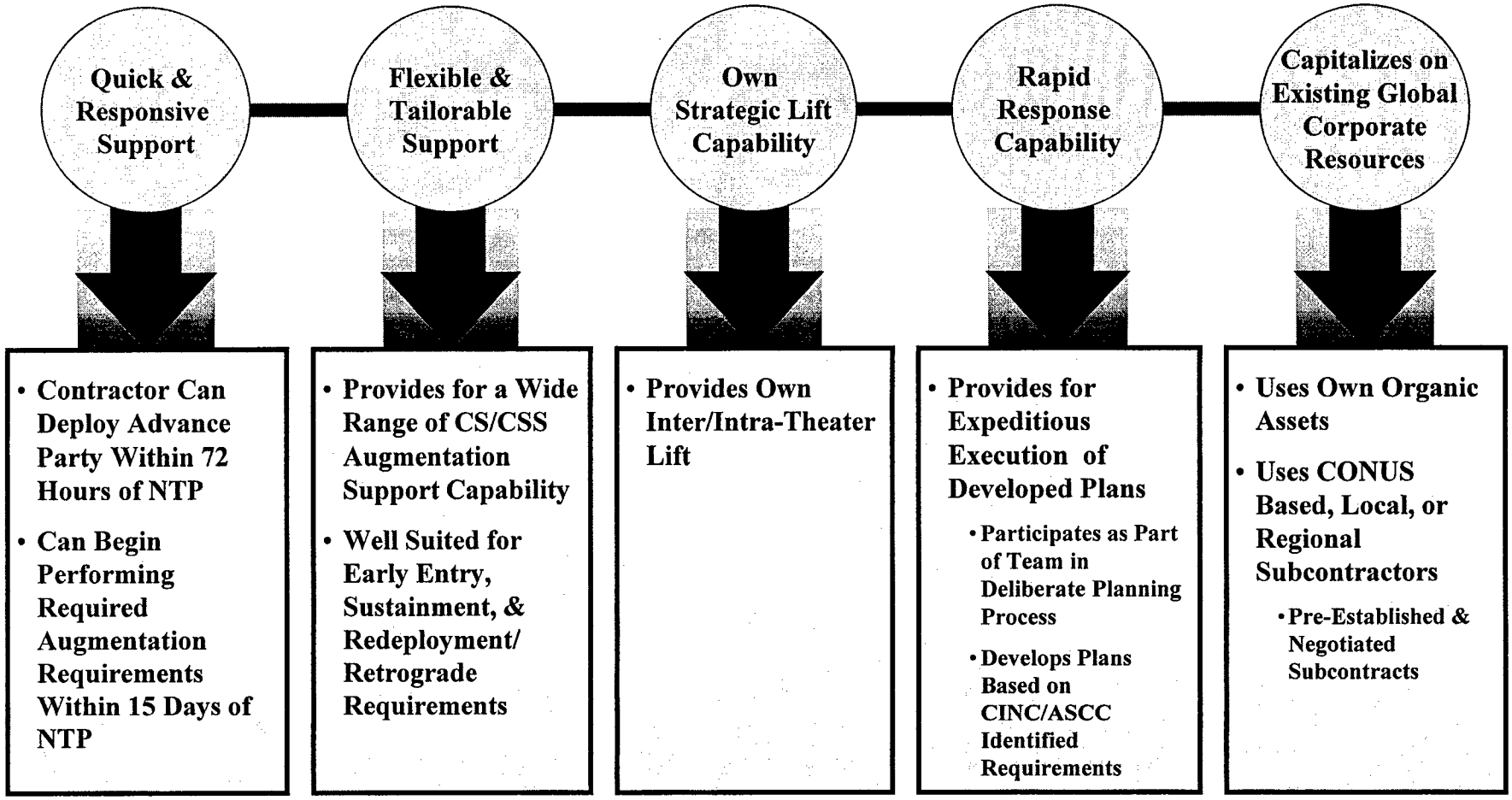
Current Personnel Skills and Support Services (continued)

- CSSC (Army) — Full logistics support, including construction, to Army forces
- Kuwait (Kuwait) — F-18 Aviation Maintenance to Kuwait Air Force
- Honduras (Army) — BASOPS
- QATAR (Army) — Security Services to APS Site

P
- Former Yugoslavia (State) — Personal Protection Services

P
- Haiti (State) — Personal Protection Services
- LOGCAP (Army) — Full Logistics Support, *to Include Construction*, to Deployed Forces

Operational Strengths of DynCorp



UNDER LOGCAP DYNCORP MUST MAINTAIN A CAPABILITY TO RESPOND TO TWO MAJOR REGIONAL CONTINGENCIES (MRC) AND ONE MINOR OR OPERATION OTHER THAN WAR (OOTW) SIMULTANEOUSLY. WE CURRENTLY HAVE THREE BATTLE ROSTERED TEAMS FULLY POR QUALIFIED READY TO DEPLOY WTHIN 72 HOURS WITH A MAIN BODY DEPLOYABLE WITHIN 15 DAYS. DYNCORP HAS A STATE OF THE ART OPERATIONS CENTER IN FORT WORTH, TEXAS WHICH CAN BE MANNED 24 HOURS A DAY WITH SECURE COMMUNICATIONS TO ANY PLACE IN THE WORLD. THIS CENTER WAS RECENTLY ACTIVIATED FOR THE PHASE-IN OPERATION IN ANGOLA, AND ELEMENTS OF THE ADVANCED TEAM BATTLE ROSTER "A" DEPLOYED IN-COUNTRY WITHIN 48 HOURS.

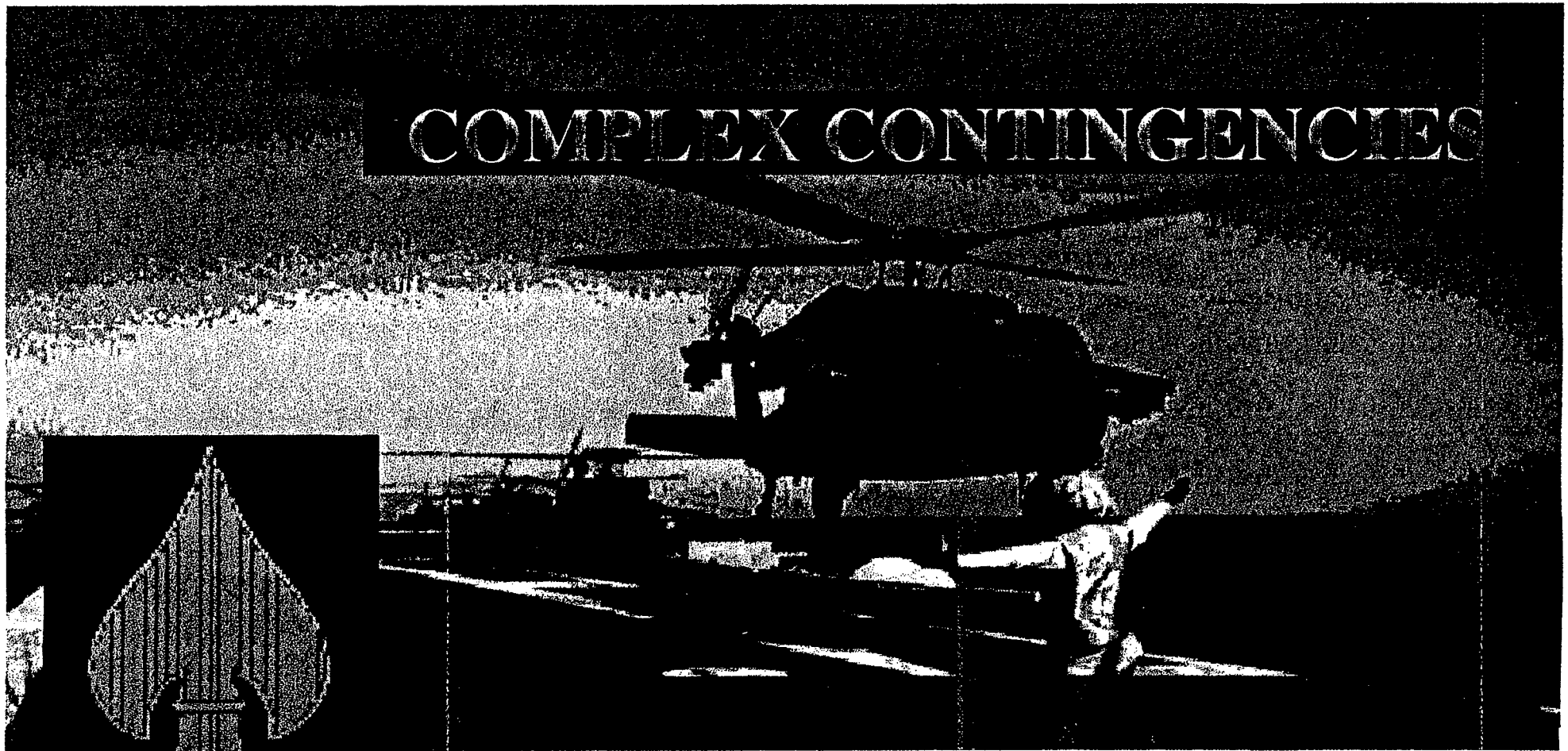
DYNCORP CAN PROVIDE BOTH GENERIC AND SPECIFIC CAPABILITIES PLANS PROVIDING AUGMENTATION SUPPORT TO SOF OR TO CS/CSS UNITS IN SUPPORT OF SOF IN ACCOMPLISHING LOGISTICS AND ENGINEERING/ CONSTRUCTION REQUIREMENTS. WE CAN FOCUS ON PLANNING AUGMENTATION SUPPORT FOR BASE CAMP CONSTRUCTION, BASE CAMP OPERATIONS, AND FIELD SERVICES. ADDITIONALLY, WE ALSO PROVIDE FOR A COMPREHENSIVE CS/CSS AUGMENTATION CAPABILITY WHICH MAY PROVIDE COMMANDERS AN ALTERANTIVE MEANS TO SOURCE OTHER SUSTAINMENT REQUIREMENTS NOT IMMEDIATELY AVAILABLE BY OTHER MEANS

5A Continued

Why DynCorp?

- Contingency Contractor
- Extensive Transition Experience
- Experienced and Highly Trained Work Force
- Flexible Organization
- Minimum Life Support Required
- Experience in Responding Quickly and Decisively Worldwide Deployments
- Extensive Experience in Upload/Download Staging Operations
- World Class Planning Capability
- Worldwide Presence

IN SHORT, DYNCORP OFFERS AN EXPERIENCED, COST EFFECTIVE, FORCE MULTIPLIER OPTION TO SUPPORT SOF PEACEKEEPING OPERATIONS IN A VARIETY OF CONTINGENCIES/SCENARIOS WORLDWIDE



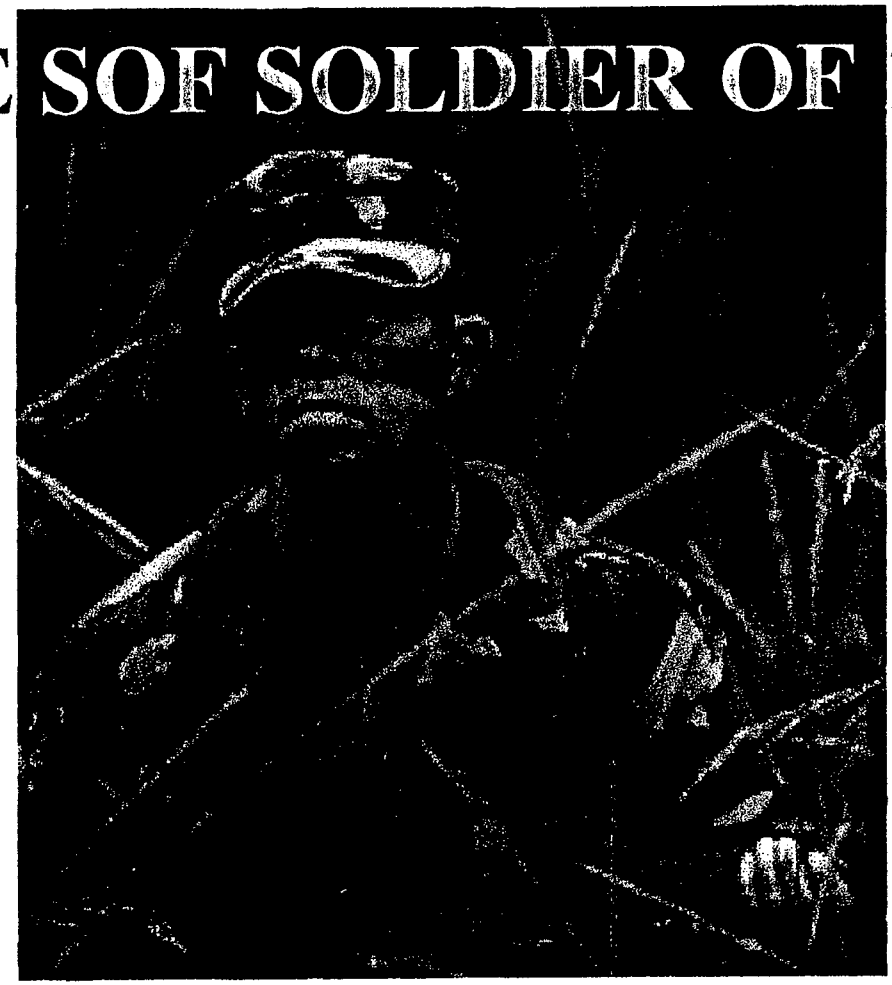
THE FUTURE OF SOF IN THE NEW WORLD DIS-ORDER



Briefing Content is

UNCLASSIFIED

THE SOF SOLDIER OF 2020



SOF soldiers will face missions for which they have little experience, missions that have no precedent and do not fit the usual idea of 'military operations.' *Special Warfare 1997*

THE SOF SOLDIER OF 2020

A warrior-diplomat who will influence, advise, train and interact with foreign forces and populations. SOF will react upon warning to defuse a conflict before it occurs or before it can escalate.

SOF Vision 20220

THE SOF SOLDIER OF 2020







To have appropriate doctrine, adequate training, focused leader-development, efficient organizations and the correct technology, we must determine what will be needed and advocate those requirements today.

COMPLEX CONTINGENCIES:

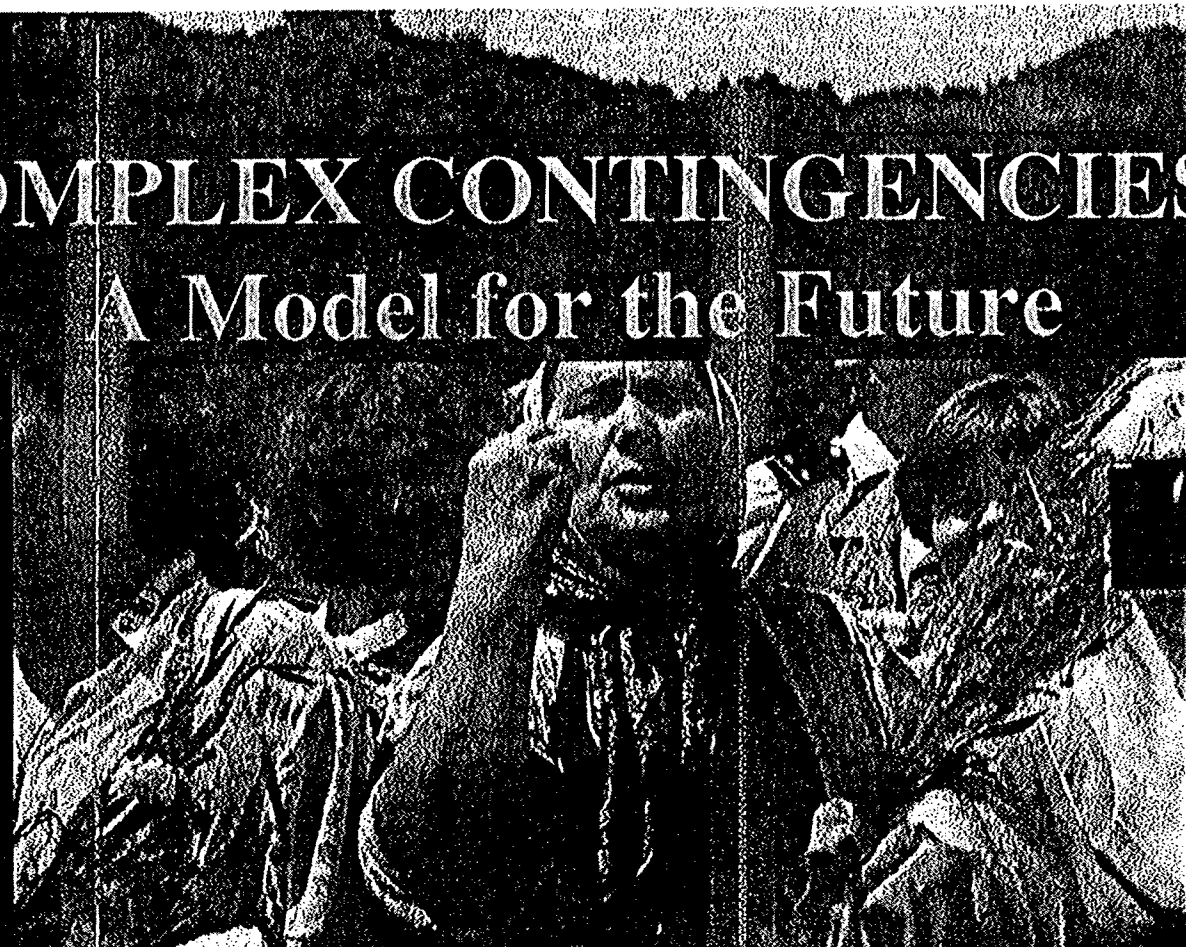


The Bad News: The future is already here.
It's called "complex contingencies" by the NCA and its not going to go away.

The Good News: SOF is already carrying out these missions and doing a pretty good job.

The Bottom Line: We can do even better.

COMPLEX CONTINGENCIES:
A Model for the Future

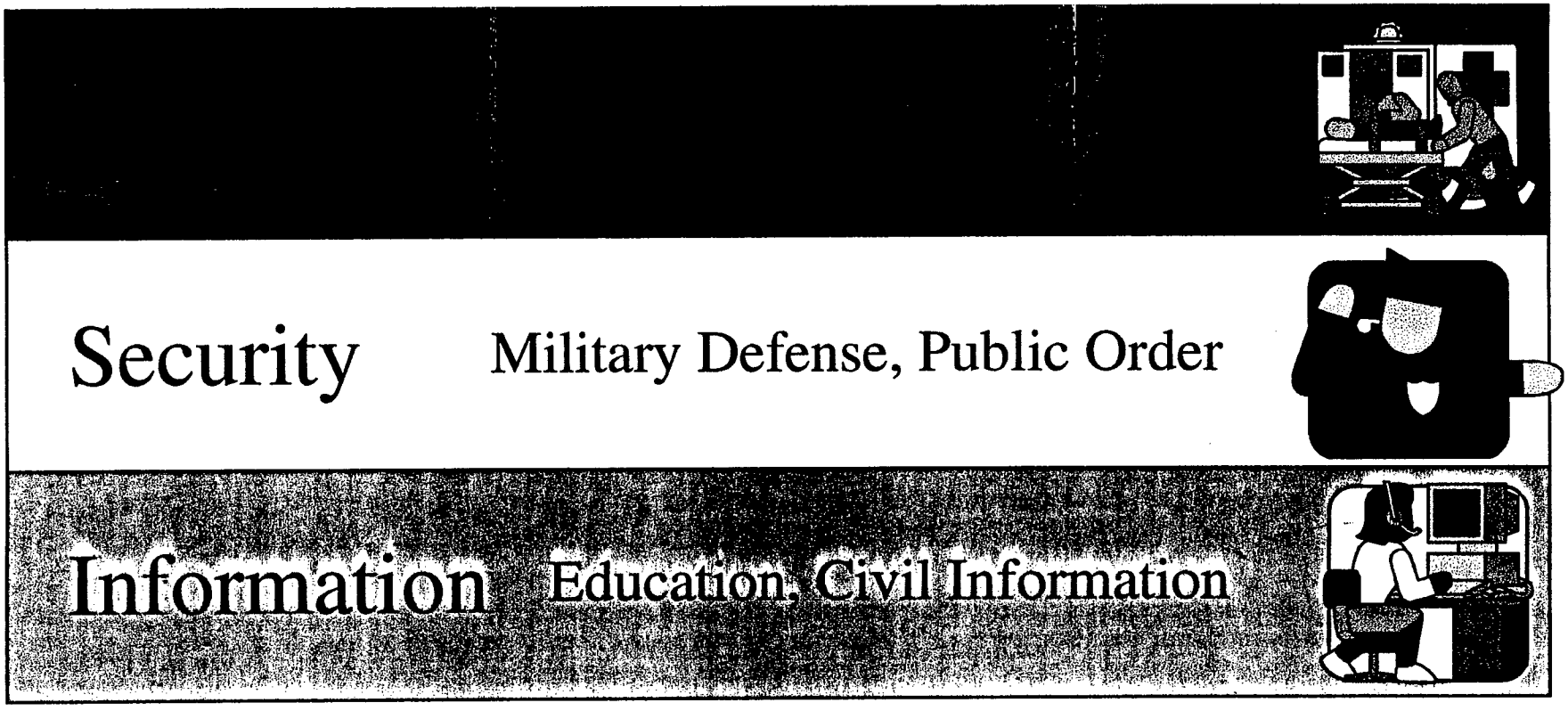


A breakdown of internal authority such that an international response is required to restore order and alleviate suffering.

CJCS Peace Ops Seminar 1997

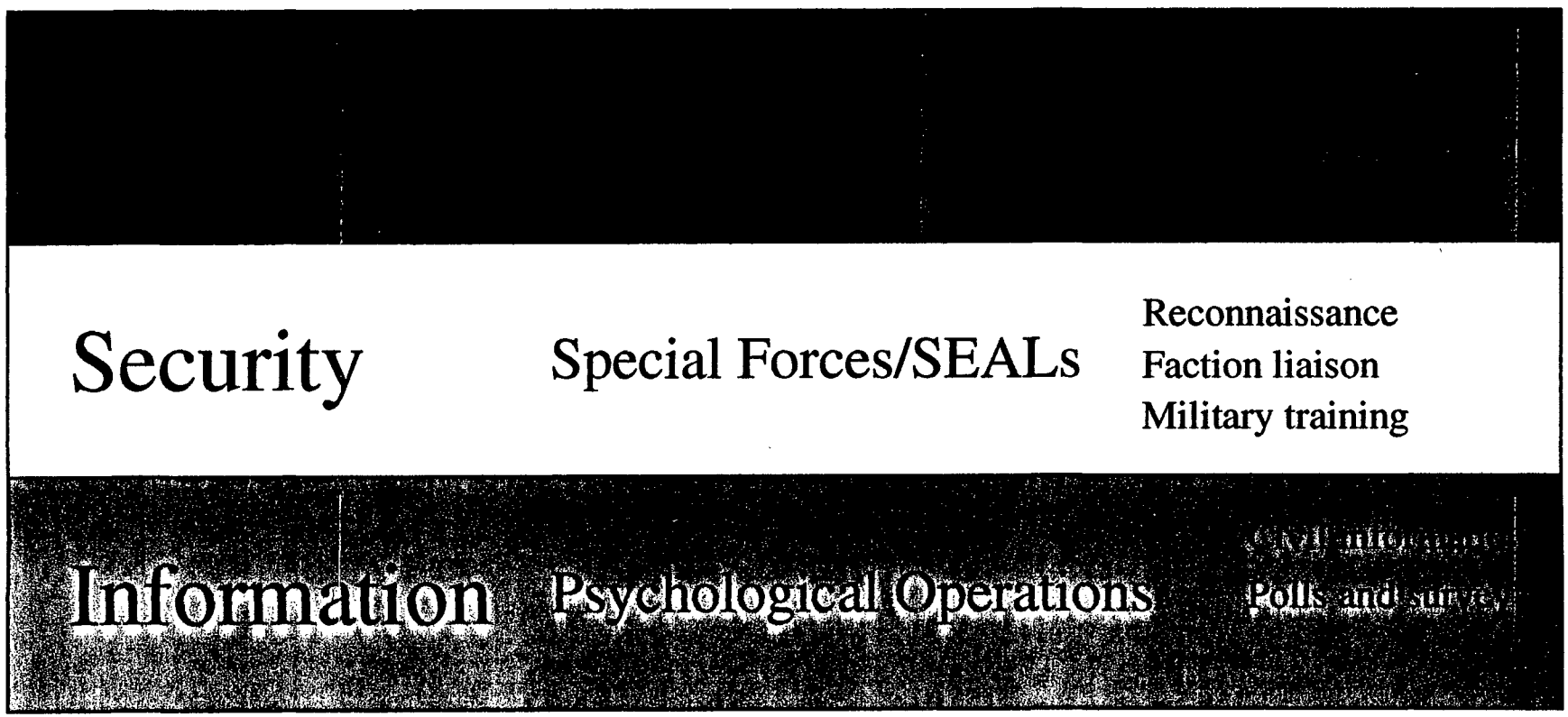
THE SOF ROLE IN COMPLEX CONTINGENCIES

Most forms of Complex Contingency have three primary dimensions:

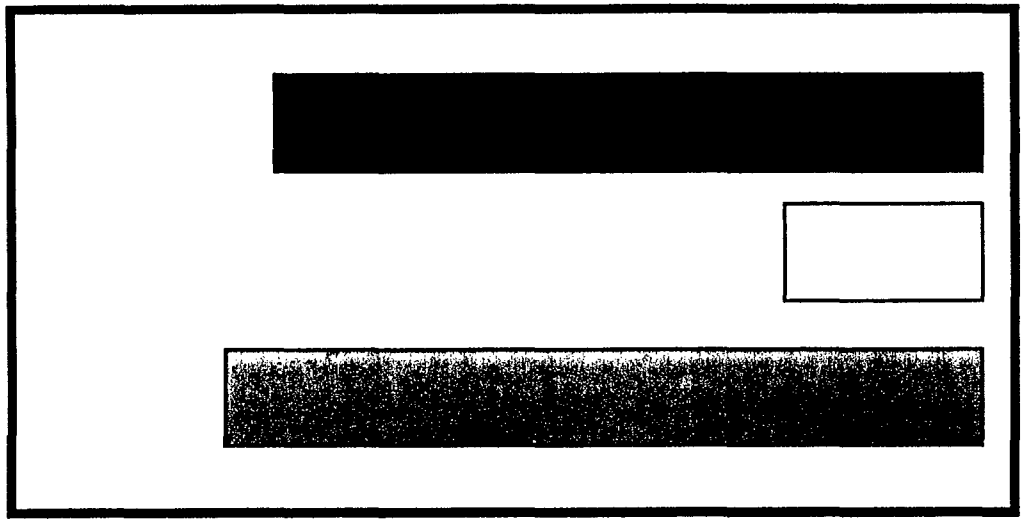


Although the dimensions overlap, they can be separated for purposes of examination:

Each Dimension is the Province of a SOF Entity:



BOSNIA
Operation Joint Guard



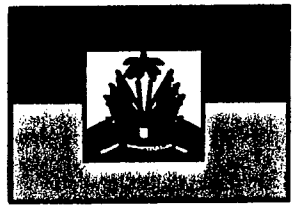
Recovery

Security

Information

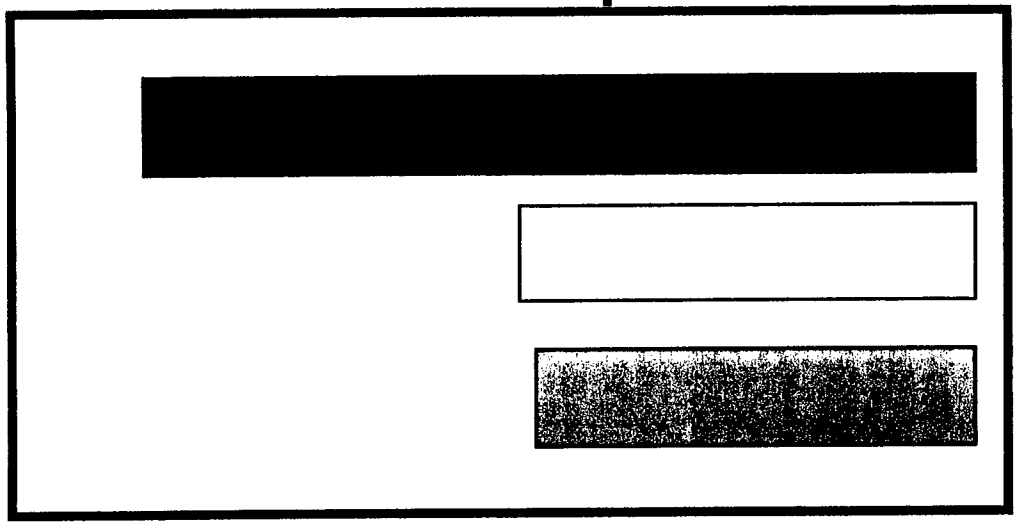
Coordination with/support to conventional forces.
Conducted psychological operations.
Liaison with local military & paramilitary.
Worked with NGOs and US agencies.
Road repair (US military).
Helped organize support for local teachers and schools.
Assisted in the repair of water and electrical systems.
Worked with local leaders for aid distribution.

Interview data Aug-Sep 1997





HAITI
Operation Support Democracy



Recovery

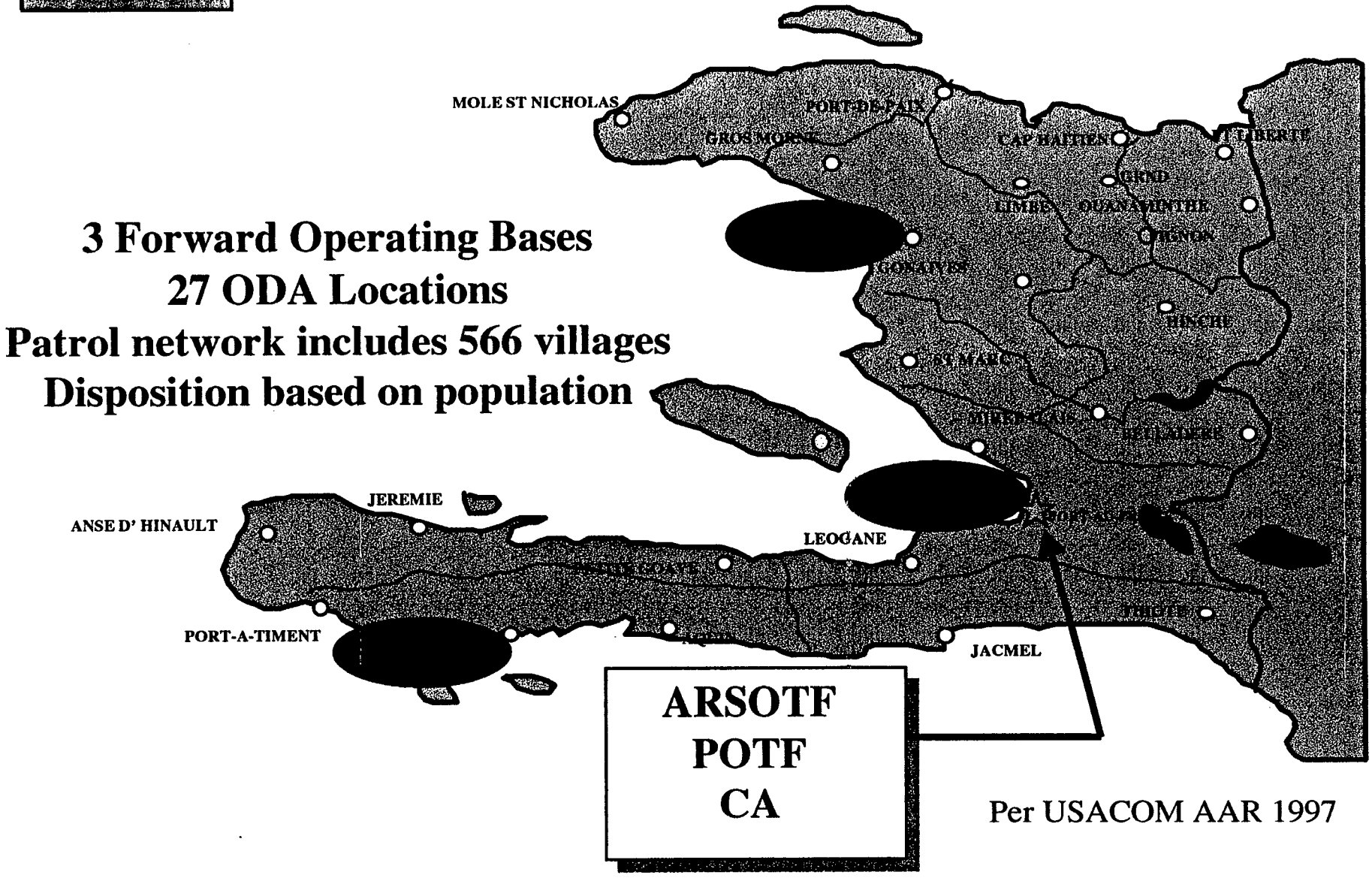
Security

Information

Coordination with/support to conventional forces
Conducted psychological operations.
Liaison with local military and police.
Worked with NGOs and US agencies.
Road repair (civilian road crews).
Helped organize City Councils.
Reorganized local jails to insure cleaning & prisoner care.
Helped organize and support local teachers and schools.
Assisted in the repair of water and electrical systems.
Acted as "defacto" local police.
Worked with local religious leaders including voodoo for aid distribution.

Interview data 1996

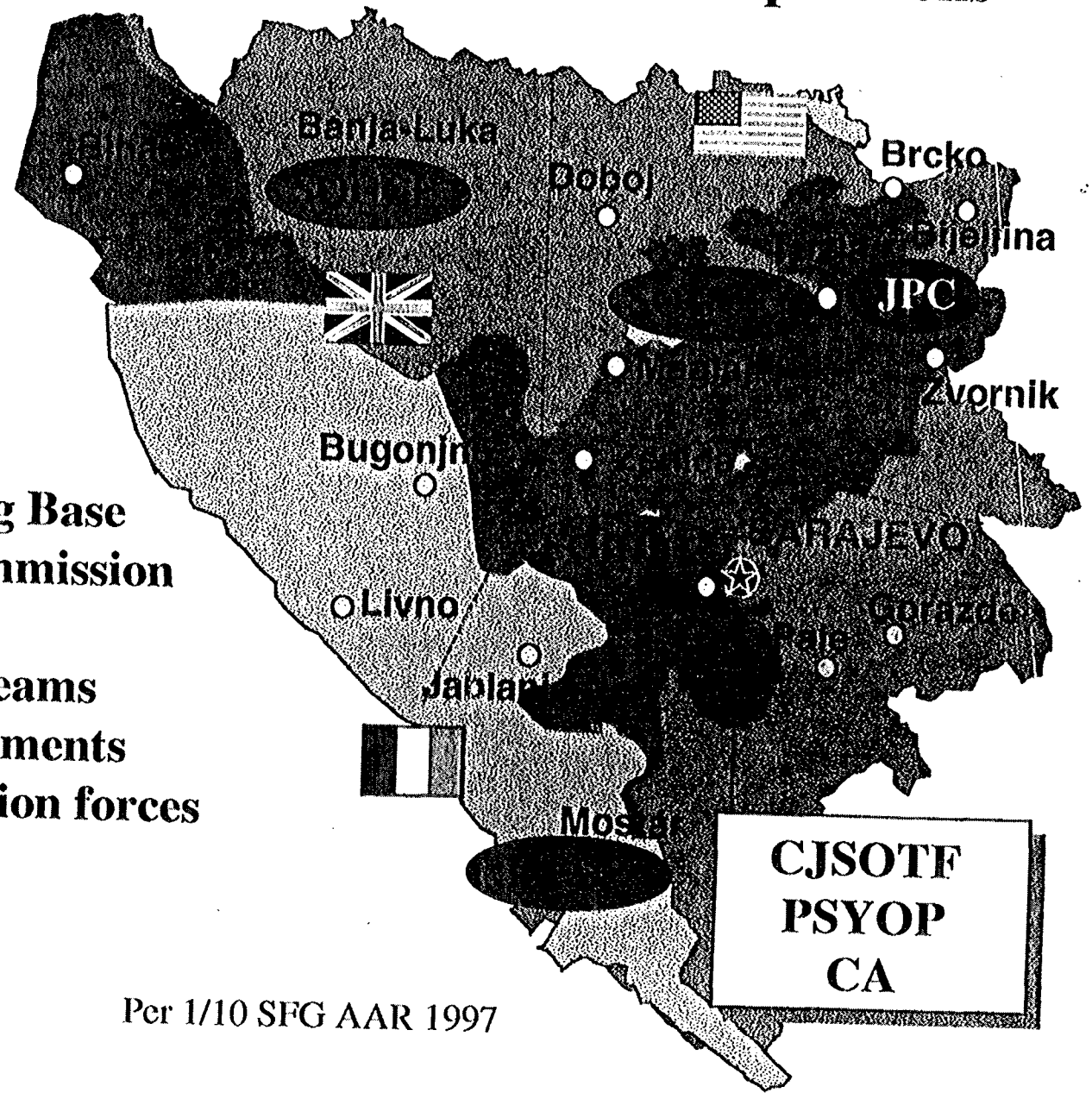
MNF Area of Operations



3 Forward Operating Bases
27 ODA Locations
Patrol network includes 566 villages
Disposition based on population

Per USACOM AAR 1997

MND (N) Area of Operations



1 Forward Operating Base
Joint Paramilitary Commission
3 SOCCE's
o12 US/o2 IT JCO Teams
2 Liaison Control Elements
Disposition based on faction forces

Per 1/10 SFG AAR 1997

BOSNIA PRE-MISSION TRAINING *

Task:	Planned	Actual
Communications:	40	3
Patrolling:	8	4
Medical:	8	4
Force Protection:	8	3
Country Orientation:	2	2
Briefing Technique:	2	2
Negotiation/Mediation:	40	13
Civil Affairs:	8	8

Language training often conflicted with the above.

** Excludes weapons, live-fire and medical training which were conducted separately*

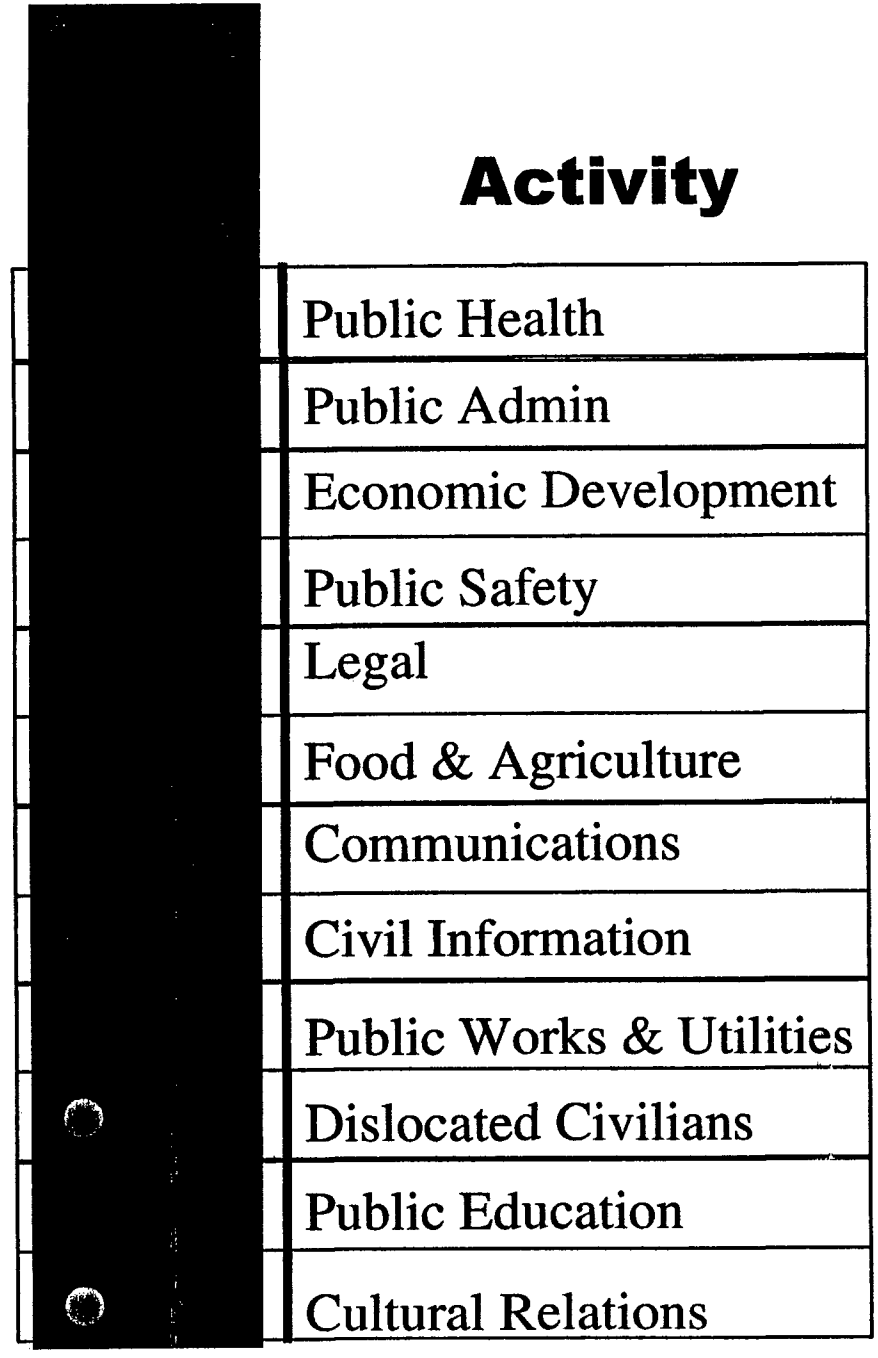
Per JCO AAR Aug 1997

CIVIL AFFAIRS

Operation

Planned vs Actual
CA Requirements
in Haiti & Bosnia

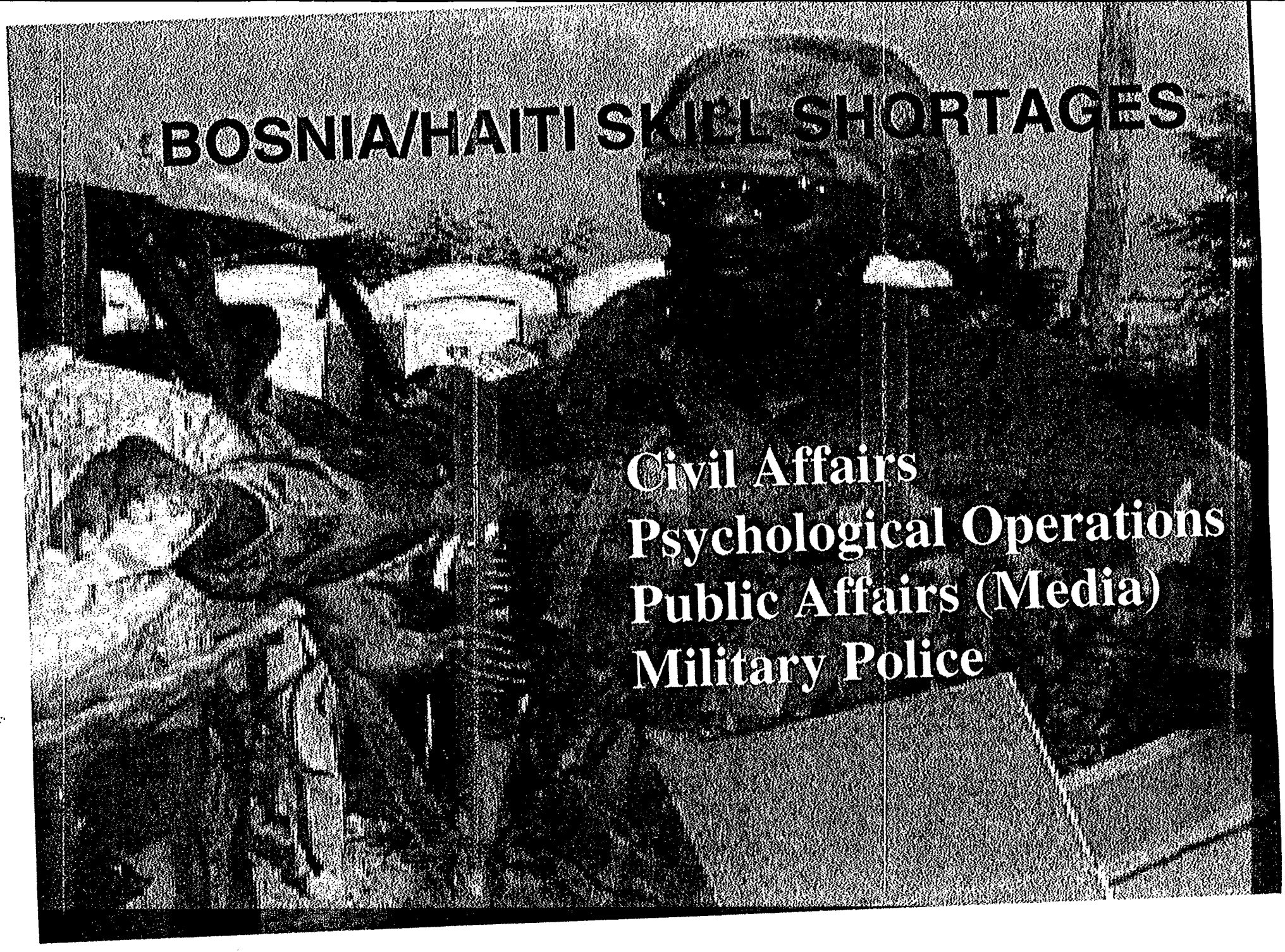
Planned ●
Emerged X



Data courtesy SWC 1998

PSYCHOLOGICAL OPERATIONS

- Information Management
- Information/C2 Warfare
- Area & Cultural Studies
- Mass Media/Multi-media
- Marketing & Polling
- Intelligence
- Production & Dissemination
- International Law


BOSNIA/HAITI SKILL SHORTAGES
Civil Affairs
Psychological Operations
Public Affairs (Media)
Military Police

THE CHALLENGE

A HEAVILY POPULATED POLITICAL-MILITARY "BATTLEFIELD" CHARACTERIZED BY:

Missions, objectives and end-states that are more political than military.

Interagency coordination demands including IOs, NGOs, local civil government, military, police and paramilitaryactors.

The Defense–Industry Team for SOF

Thank you Bill [MGen William Moore].

Secretary Holmes, [other VIPs], and members of the Special Operations Forces, thank you all for being here tonight. It's great to see so many faces here. As an old Marine, I was anticipating a somewhat hostile crowd, so it's great to see so many *friendly* faces.

But just to put you further at ease, let me assure you that this is *one* Marine who has *no* designs for taking away the work of the Special Operations Forces!

(Pause for laughter)

In fact, one of my major goals is to help you better accomplish your missions, which are getting more numerous and more complex all the time. I'll talk more about that in a few minutes.

You know, I normally don't consider seven years a milestone anniversary, but considering that this month marks seven years since the conclusion of Operations Desert Shield and Desert Storm – and SOF's unique contributions to that conflict – I'm going to make an exception.

In fact, let's take a quick trip back seven years and recall some of those significant contributions.

Recall that four days after President Bush's announcement that American forces would

deploy to the Persian Gulf, Special Operations Forces were already in country in Saudi Arabia. The first in were the Navy Special Warfare units with SEALs, special boat units, SEAL delivery vehicles and desert vehicles.

This unit grew to include 260 men, who were part of the 7,000 special operators in the coalition forces, the largest SOF deployment ever made by United States.

SOF was literally leading the way the moment the war started. At 0238 hours on 17 January, four MH-53 Pave Low helicopters from the 20th Special Operations Squadron led two flights of Apaches to make the first strike of the offensive. That strike destroyed two key Iraqi early warning radar sites in western Iraq, opening

an air corridor that let nearly 900 coalition aircraft into Iraq on that day alone!

Recall also that during the airwar, special forces teams were sent into Iraq in search of Scuds and to conduct reconnaissance in support of the upcoming ground offensive. In fact, just prior to G-Day, Special Forces conducted 12 special reconnaissance missions deep into Iraq to watch for the repositioning of Iraqi forces and to spot signs of an intended Iraqi counterattack.

A solid testament to the fighting skill of these soldiers comes from one of those missions. You may recall the 10-man "A" team that survived detection in its desert "hide site" by fighting an Iraqi force that outnumbered them 15 to 1, eliminating 150 Iraqi soldiers with no causalities

to themselves, then escaping safely by helicopter.

Then there were the MC-130 Combat Talons from the 8th Special Operations Squadron, who used the enormous 15,000-pound bombs to breach Iraqi minefields, and I'm sure take a heavy psychological toll on the Iraqis at the same time.

And tackling the mine problem a much different way, Navy SEALs destroyed 25 mines in the Persian Gulf, dropping from helicopters into the water to attach demolition charges.

SEALs also captured the first POWs of the war, when they seized an off-shore oil platform. They captured another 67 POWs – and a large

cache of weapons – when SEALs assaulted and recaptured Qarah Island, the first time the Kuwaiti flag was raised again over invaded territory.

AC-130 Spectre gunships held down Iraqi forces in Southern Iraq, northeast Kuwait and near Kuwait City. They also played a key role in retaking Khafji by the coalition forces. That effort came at a high price, as we remember the 14 crew members lost on on the morning of 31 January, 1991, when Spirit 03, an AC-130, was downed by enemy fire. I was in the Marine Expeditionary Forces operations center about 80 miles away that morning, and the trajedy has left a lasting impression on me.

(pause briefly)

Recall also the importance of PSYOPs in Operation Desert Storm. In fact the 4th Psychological Operation Group's leaflet drops, coupled with B-52 bombings, take the credit for the surrender of almost 60,000 Iraqi, many of whom were waving the leaflets as they turned themselves in at the coalition front.

The 96th Civil Affairs Battalion, the only active duty civil affairs unit in US SOCOM, was deeply involved in the operations from start to finish, preparing coalition troops for the region's cultural uniqueness, managing and supporting the nearly overwhelming surge refugees and POWs and assisting in the reconstruction of Kuwait.

And lastly, SOF was the glue that held together the Coalition Forces. The liaison officers SOF provided were key to successful combined operations.

Those are incredible SOF accomplishments, and indicative of an incredible group of soldiers, sailors and airmen!

I salute those of you here tonight!

(Lead applause)

Indeed, the Special Operations Forces have much to be proud of. When I look back at SOF over the last almost two decades, I see *evolution* and *maturation*. Since the hard look that was taken following Desert One in 1980, Special Operations has undergone an evolution and maturation – in its mission, operations,

organization and technologies. The successes have racked up – Grenada, Panama, Desert Storm, Somalia and Bosnia – and SOF has gotten better every time.

Yet there is a challenge for the future of SOF that needs to be addressed today. Your OPTEMPO is increasing daily and your sustainment bills are increasing hourly. And these bills are all being paid out of your investment accounts. Simply put, *your today is consuming tomorrow*.

You face the challenge of achieving SOF's Vision 2020 in an era of declining budgets – everything's better, faster, cheaper – but at the same time meeting ever-increasing tasking levels.

This challenge of a drastically changing tomorrow became especially clear to me during my work as a member of the National Defense Panel. In our report, which we delivered to Secretary of Defense Cohen last December, we identified that the force structure of the future must have the ability to respond to new challenges, such as:

- The use of weapons of mass destruction – especially against civilian and commercial targets at home and abroad by terrorist means;
- Deep inland operations;
- Information attacks;
- The absence of access to forward bases, and

- Space operations.

To meet these new threats, it's clear that in the 2010 to 2020 time frame our military forces, Special Operations included, will need capabilities far greater than those they currently possess.

We will need greater mobility, precision, speed, stealth and penetration. We need new information-related technologies to detect, identify and track far greater numbers of targets over a larger area, and for a longer time, than ever before.

We must exploit the opportunities those technologies present to dissipate the "fog of war" and gain significant advantages against our foes.

In addition, we need a smaller logistics footprint than we've had in the past. Lean logistics means less of a strain on our own infrastructures and strategic air and sea lift, while at the same time providing less of a target to our enemies.

Our forces must become faster, more lethal, more expeditionary, lighter and less manpower-intensive. In other words, the other services need to model themselves after our Special Operations Forces.

The good news is that we on the National Defense Panel identified those major shifts in our nation's force structure. The bad news is that we didn't write down the answers on how to do it!

What I do know is that, especially in the case of Special Operations, it will take innovative, breakthrough technologies. And to achieve those, it will take a new partnership with industry – a new way of defining needs, developing systems and acquiring them. I am here to tell you that industry, especially the corner of it that I come from, stands ready to support you.

US SOCOM was founded to create jointness across our special operations forces. You have achieved that mission magnificently! You have SEALS flying in Army helicopters. You have Air Force and Army helicopters operating off Navy ships. You have Army Rangers inside Air Force gunships. You truly are a purple fighting force – DoD's template for joint operations.

And in that same spirit of jointness, it's my hope that industry can be a partner in that joint effort to a greater extent than ever before.

In its history, SOCOM, along with its industry partners, has done a good job making marginal, yet significant improvements to existing systems, and getting those systems into the field. TFTA radars and fire control system, specialized boats, ruggedized communication systems, improved diving equipment, and enhanced sniper rifles, scopes and night vision goggles are some good examples.

Let me digress for one moment again to my work on the National Defense Panel. It became very clear to me during that time that our military

has four distinct advantages, advantages that must be maintained if we are going to *transform* our forces for the future.

They are:

(use fingers to numerate each point)

- Well trained, disciplined troops;
- Led by superb NCOs and officers;
- Equipped with an overwhelming technical advantage; and
- Possessing an influence projection capability that no one else has.

Along that thinking, I firmly believe the next phase of SOF's evolution and maturation – its transformation to achieve Vision 2020 – will require not only *improved* technology, but in a greater sense *breakthrough technology*. Breakthrough technology in mobility, sensing and

identification, miniaturization, secure communications, advanced munitions, stealth, human enhancements and robotics.

This is why a new, reinvigorated partnership between SOF and industry is so important. You don't need to hear it from this Marine – funding new technology, especially the breakthrough variety, is expensive – darn expensive. We in industry, however, can do our part to make it affordable.

How can this partnership work? Let me share two elements I believe are key to this success.

First, I encourage SOF to involve its industry partners as early as possible in the process to

define and develop requirements. Industry then can do its part to identify the appropriate technology – Is it achievable with off-the-shelf or modification technology? Or does it require a leap above and beyond technology that currently exists?

Let us be part of the joint team that makes these early, critical decisions. If industry participates early in the requirements definition process, you can then leverage the industrial IR&D investment accounts just as you have successfully done with the services and laboratories.

Second, to fund technology breakthroughs, let industry do its part to squeeze the costs out of your operations. Help us pin-point where the high

costs are. Allowing contractors to apply commercial processes to support SOF systems frees up resources, resources I hope SOF can earmark for solving future technology needs.

What's our responsibility? We in industry will do our part to help take the costs out of our products. By developing and building systems with increased mean time between failures, less man-in-the-loop support, among other methods, we can help turn some operation dollars into technology development dollars.

Achieving these savings may mean changing a number of paradigms. For instance, the traditional concepts of organic maintenance and support may not be in SOF's best economic interest.

Cheaper...better...faster. Contractor logistics support may be the best answer for SOF. CLS has been proven to be tailor-made to support a number of the highly specialized systems that SOF operates. Extending this concept will almost certainly achieve critical cost savings in the ever growing O&S accounts and help preserve SOF's future investments.

I urge US SOCOM to re-examine its current support posture in partnership with industry, and not be bound by traditional ways of doing business. Industry can provide you the weapons to fight the war against the "cost of ownership."

And of course, we need to look at how breakthrough technology, when placed in a new

paradigm of Special Operations force structure, might result in even greater savings. For example, can 50 tiltrotors replace 87 aircraft? Can warfighters trained with next generation instructional methods result in the requirement for fewer battalions?

Those are questions yet to be answered, and no question about it, SOF faces a hefty challenge. Demands for your capabilities are going up – increased OPTEMPO, more difficult tasking, coupled with tighter funding.

I'm confident, however, that as a truly joint team, SOF and industry, we can develop, build and support a new realm of technology that will bring you to 2020.

I look forward to that challenge, and to the opportunity to work together to perform the absolutely critical mission of Special Operations Forces, and achieve your Vision 2020.

Thank you.

ASD H. Allen Holmes

"SOF Modernization – Assuring Superiority for the Future"

National Defense Industrial Association

Washington, DC

February 19, 1998

Thank you General Skibbie, General Moore, Colonel Henderson and all the participants of this symposium. First, I would like to recognize the new National Defense Industrial Association for sponsoring this conference. In the nine years that it has been held, this symposium has consistently provided an excellent forum for members of industry and government to meet and discuss issues important to Special Operations and Low-Intensity Conflict. I look forward to NDIA's continued support.

I am glad that you had an opportunity to hear from General Schoomaker yesterday and to participate in a number of workshops to discuss issues of critical importance to our national security. It is my privilege to join you this morning to address "SOF Modernization" and to share with you some of my thoughts from a policy perspective.

As many of you know, last year, the Department was involved in a number of studies – such as the Quadrennial Defense Review and the National Defense Panel. These studies took a hard look at our future defense needs and the direction in which the Department is likely to be headed into the next century. One of the encouraging

developments that my staff saw during the many panels and review group sessions, was the prevailing recognition of the importance of SOF.

Our senior defense leaders – both Secretary Cohen and General Shelton – are very familiar with the Special Operations Community and its accomplishments. This is not surprising, as SOF has played a part in most of the recent military operations that have received high-level attention – including our ongoing efforts to create inroads of peace and cooperation in Bosnia; efforts to safeguard innocent citizens of the US and our allies in Africa; and efforts to stem the growing threat posed by terrorists and the use of asymmetric weapons of mass destruction.

Indeed, SOF has come a long way in the last decade, and its capabilities have been increasingly demanded by CINCs, Ambassadors, and policymakers. Nevertheless, we cannot permit ourselves to become complacent. Our challenge is to ensure that we remain at the leading edge in this world of accelerating change. To meet this challenge, we need to ask ourselves 3 basic questions:

1) How will the battlefield change?

2) What will SOF's role be in this new environment?

and

3) How can we best accommodate that role?

HOW WILL THE BATTLEFIELD CHANGE?

Approaching the 21st century, our country faces a dynamic and uncertain security environment. We are in a period of strategic opportunity as the changing global economy and proliferation of international information systems continue to transform culture, commerce, and global interaction. We also find ourselves in a period of uncertainty, surrounded by increasingly complex, dangerous, and unpredictable threats.

The national security challenges that confront us, do not respect boundaries and they seldom have a face. Weakened alliances and emergent regional powers in Southwest Asia, the Middle East and Northeast Asia will continue to threaten regional stability. Meanwhile transnational threats such as drug trafficking and terrorism continue to expand. Furthermore, as we have seen in

Somalia, the former Yugoslavia and Zaire, failed or failing states create instability, internal conflict, and humanitarian crises. In some cases, governments lose their ability to maintain public order and provide for the needs of their people, creating the conditions for civil unrest, famine, massive flows of migrants across international borders, and aggressive actions by neighboring states.

Safeguarding a free and stable world will require a range of action on the part of the international community. While the United States has no desire to be the world's policeman, we will do what we can to make our world safer and more prosperous. And the actions that we take should be considered within the framework of the three-pronged defense strategy articulated by Secretary Cohen earlier this year: shape, respond and prepare. Our forces are called upon to *help shape* the international environment and *respond* to the full spectrum of crises, *while preparing* now for an uncertain future.

SOF'S ROLE IN THIS NEW ENVIRONMENT

- **Shaping the International Strategic Environment**

John F. Kennedy once said that peace is a daily process which gradually changes opinions, slowly erodes old barriers, and quietly builds new structures. And however undramatic the pursuit of peace, the pursuit must go on. Although they seldom make the newspaper headlines, SOF's steady-state efforts help foster stability and prevent local problems from developing into threats to international security.

Our humanitarian demining efforts around the world offer a poignant example of SOF's contribution to shaping the international security environment. As part of the U.S. Government's humanitarian demining program, Special Forces units have the primary responsibility for training host nation deminers. Civil Affairs units help countries to develop indigenous demining entities. And PSYOP personnel conduct mine awareness programs which educate populations in affected areas regarding the dangers of landmines, what they look like, and what to do if a landmine is located.

DoD also continues to pursue a robust research and development program to develop simple, inexpensive equipment to enhance a country's ability to detect and clear landmines. Recently, my office hosted a workshop that brought together scientists, policymakers and the heads of Mine Action Centers to discuss the technological needs of deminers *in their different operational environments.* The most immediate needs identified were low-tech equipment, such as protective devices, and reliable tools, like vegetation cutters, that would help clear areas where mines may lie. The challenge for this program is that the equipment we design can be adapted for the deminers laboring in the hot Jordanian desert and those in the lush Cambodian tropics and those in the cool Bosnian hills. Congress has appropriated over $16 million this year for these R&D activities, and a similar amount of funding is projected out to 2003.

Since our humanitarian demining effort began four years ago, SOF personnel conducted humanitarian demining training in 15 countries throughout Africa, Latin America, Indochina, and Bosnia. In 1997 alone, over 276 U.S. military trained an estimated 1,200

deminers—more than double the number in 1996. In addition, over the last two years, DoD has provided more than $900,000 in equipment and supplies to assist deminers.

The goal of our humanitarian efforts is to help countries build long-term indigenous infrastructures capable of educating the population to protect itself from landmines, eliminating the hazards posed by landmines, and returning mined areas to their previous condition. Through this steady-state effort, SOF is helping other countries to transform these fields back to usable, planting fields. And in doing so, SOF efforts help build confidence in fledgling governments and allow countries to finally move past the wounds inflicted by past wars.

- **Responding to the Full Spectrum of Crises**

While we do our best to promote regional stability and deter crises through steady-state efforts like humanitarian demining, we must be ready to respond to those crises that do hit. The U.S. military can, and has, provided rapid response, logistics, transportation and global communications support capabilities

required for a humanitarian relief operation. Similarly, we have a lot to offer in support of complex peacekeeping operations. But the United States cannot operate alone. Transporting massive amounts of relief supplies around the world, coordinating the distribution of supplies, and assisting in the implementation of peace accords all represent massive challenges that no one country can tackle alone.

The multinational nature of both humanitarian assistance and peacekeeping operations requires us to prepare to work closely with other countries. SOF, with their language proficiency, cultural awareness, and regional orientation, are uniquely suited to serve as DoD's representatives with local governments as well as non-governmental and international organizations during such humanitarian missions. Our military personnel routinely demonstrate their flexibility and ability to work around almost any interoperability challenge once an operation has begun.

We recognize that doctrine should not, and cannot, be made universal: one size will not fit all, given the different practices and tradition of various armed forces. But we can endeavor to ensure

that the doctrines and techniques of our primary partners are roughly in harmony. If we are to conduct these operations together, we must first be familiar with each of our partners in other countries. We must develop creative ways to meet the overall goals of the mission despite our differences. And to conduct these operations with greatest effectiveness and efficiencies, we must seek synergies among the different participants, capitalizing on our various strengths.

Because of the experience, adaptability and creativity of our Special Operators, SOF can and has led the way in finding the best ways to conduct these operations while also reducing risk. Meanwhile, industry can also play a role by recognizing the varying requirements due to environmental, cultural, and operational parameters in the different regions of the world where SOF personnel are deployed.

- **Preparing Now for the Future**

Indeed, SOF has been seen as an attractive force for peacetime operations like demining, humanitarian assistance, and

peacekeeping because of its regional orientation, language skills, and cultural sensitivity. As the demand for SOF continues to increase and the types of missions become more diverse, it is important to remember that Special Operators are warriors – first and foremost.

From its founding, SOF have always been known – and respected – for their ability to carry out the most demanding direct action, special reconnaissance, and unconventional warfare missions. Special Operators have distinguished themselves in every major American conflict of the past four decades. We can expect that these traditional missions will continue to be central to SOF.

Nevertheless, as I indicated in the beginning of these remarks, those who do seek to challenge us will do so not only with tanks, jet aircraft, and aircraft carriers. We also must be capable of responding to aggressors who operate outside of traditional parameters to exploit our weaknesses – to attack us asymmetrically – challenging our political, economic, technological, cultural, and other interests, both overseas and at home.

Protection of our infrastructure, private commercial activities, or of our citizens on U.S. soil do not typically fall within the legal or political authority of the military. But at the same time, these challenges may be too complex for any single agency to handle. Instead, confronting these aggressors will involve swift, decisive multi-agency and multi-sectoral response.

It is important to note that the U.S. military strictly observes the Posse Comitatus Act. Our armed forces do not make arrests, seize evidence, or interrogate people – that is a law enforcement function that is strictly off limits. However, the ambiguity and complexity of future threats, whose impacts cross interagency lines of responsibility, may require military to conduct operations close to "the seam" between military and other agency functions. The military forces assigned to these difficult missions, must be mature, with the necessary political sensitivity, unwavering ethics and, the ability to quickly discern the line between legal and moral responsibility. In this operational environment, SOF is well-equipped to lead the way.

Already, the U.S. government has been adapting ourselves to operate in this ambiguous and complex operational environment. In the last decade, the U.S. Government has developed robust programs, policies, strategies and capabilities to defend against the terrorist and drug trafficking threats across the interagency. And SOF has played an important role in this effort.

HOW CAN WE BEST ACCOMODATE THAT ROLE?

With the ever increasing demand for SOF, the high OPTEMPO and PERSTEMPO, and constrained defense budget, it is important that policymakers continuously develop and adapt policies on how far we are willing for SOF to go.

Meanwhile, SOF leadership needs to ensure that we attract and retain quality people for these increasingly diverse and difficult missions. Furthermore, both SOF leadership and the SOF community must reconcile our training objectives with our strategic role and the ways in which SOF is being employed. As General Schoomaker has said, SOF must "train for certainty while educating

for uncertainty." No doubt, this is a difficult task – which will require leadership, vision and creativity at all levels of the command.

But leadership is not the only thing required . . . one of the most important facets for ensuring that we are ready to face the challenges ahead is to develop a program of "Intelligent Modernization."

- To maximize the limited Major Force Program-11 Research and Development funds, we must work closely with Services, their laboratories and development centers, as well as the National Laboratories, and clearly articulate SOF needs and requirements to capitalize on their efforts.

- We must focus the SOF research and development program on high pay-off technologies – emphasizing equipment that is the most strategically agile and those items and systems that give us quantum leaps in capability.

- We must also closely examine our legacy systems and determine when we should modify and enhance and when

we should replace. We need to continue to look for help from the services – to develop new strike, mobility, engagement, support and C4I capabilities.

The critical reality is that the choices we make today will make the difference between success and failure in tomorrow.

Funding in the future will continue to be tight. As such, industry must work hand-in-hand with U.S. Special Operations Command and the Services to find synergies and ensure interoperability.

The years ahead will undoubtedly test our adaptability and our ability to accept change. I am confident that SOF have the creativity and professional skills to tackle new, unconventional tasks, while maintaining their traditional skills. Let us make sure that we provide SOF with the right tools to help them emerge in the coming decades stronger than ever.

Thank you.

DASD Forces & Resources

Remarks to the 1998 SO/LIC Symposium

February 19, 1998

Secretary Holmes just outlined for you some of the important questions that we will have to answer, in order to ensure that SOF will be prepared to meet the challenges of the future. It is clearly evident that adapting SOF to support our nation's emerging security needs will be an incredibly important and difficult challenge that must be met. So, what do we need to do today to meet these challenges? I hope to shed some light on some potential answers to this question.

[GRAPH 1 - DoD Budget]

Let's begin with the SOF Budget. For most of you the SOF Budget is an old story. If we look at its overall relationship with the DoD budget, we can see that an extremely small portion of the budget is dedicated to Special Operations. As you can see by this graph, Major Force Program-11, that is the SOF account, represents less than 1.4% of the overall DoD budget.

[GRAPH 2 - MFP-11 Budget]

If we look at the SOF funding in more detail we can see that if we discount inflation, the top line is fairly flat. A little more than $3 Billion per year. Given that SOF has not experienced major reductions in manpower, and that there has been no reduction in the demand for SOF forces from the Theater CINCs, SOF's equipment accounts, which are made up of procurement and Research & Development, have had to provide the source for needed funds. In other words, the fiscal demands of SOF's operational requirements have precluded us from putting as many resources as we would like in the equipment accounts. From the industrial perspective this means few new programs – and taxes stress those equipment programs that do exist.

Recently, for new and expanding missions, SOF has had to ask the Department for more funds. Fortunately, we have been able to do this with some success – particularly with respect to mission areas in which SOF plays a primary role. However, our history of success at supporting our unfunded requirements has partially

blinded us to the fact that this kind of approach cannot support the development of visionary programs – and visionary programs are what SOF needs for the future.

One thing that SOF has in its favor is the fact that both the Quadrennial Defense Review and the Report of the National Defense Panel acknowledged the fact that special operations forces are uniquely suited to many of the challenges that our nation is expected to face in the foreseeable future.

[GRAPH 3: Transforming Defense - NDP Quote on SOF]

However, despite the fact that decision makers recognize the need for SOF, they must also live within the constraints of a fixed budget ceiling. Any increase in the SOF budget has to come from somewhere. The Balanced Budget Agreement means that we can no longer expect OSD to provide more funds without clearly identifying who or what the billpayers are, and how we expect those bills will be paid.

[GRAPH 4 - Defense Reform Initiative]

Secretary Cohen's Defense Reform Initiative proposes a number of approaches for reducing costs. These include:

- Streamlining Organizations;

  - The Office of the Secretary of Defense is being reduced by 33% from FY 1996 levels.

  - The Joint Staff will be reduced by 29% from FY 1996 levels

  - Defense Agencies will be reduced by 21% over the next five years

  These reductions and reoganizations are to more effeciently position the Department to face future challenges and weed-out unnecessary overlap, complexity, and redundancy.

- Reengineering Business Practices;

  - By January 1, 2000, all aspects of the contracting process for major weapons systems will be paper free.

  - In FY 2000, 90 percent of DoD purchases under $2500 will be made using the Government IMPAC purchase card.

- By this July, DoD will stop volume printing of all DoD-wide regulations and instructions and will make them available only through the internet of CD-ROM.

■ Competing to improve and save,

The Department is moving forward to increase outsourcing, for example:

- The DoD is planning to compete the following functions: civilian pay, military retiree pay, personnel services, disposal of surplus property, management of leased property, and drug testing laboratories.

- DoD will continue to pursue public-private competitions for depot maintenance work to the full extent allowed by law.

■ Eliminating unnecessary infrastructure.

- DoD will seek congressional authority for two additional BRAC rounds.

- DoD will consolidate, restructure and regionalize many of its support agencies.

- DoD will seek permanent # legislative authority to privatize family housing construction

Happily, the SOF community can say that it has already implemented many of the ideas proposed in the Defense Reform Initiative.

- As you have heard from the CINC yesterday USSOCOM has taken a radically new structure to improve the flow of information in the command and enhance its ability to perform its mission.

- USSOCOM has worked to reengineer and improve the command's strategic planning and requirements development processes.

- USSOCOM has been at the forefront of outsourcing – which is exemplified by the continued development of the Special Operations Forces Support Activity (SOFSA). SOFSA is an innovative approach for meeting the long-term logistical support requirements for many SOF unique equipment items.

- USSOCOM has tried to eliminate low-priority infrastructure. Please note that I didn't state *unnecessary* infrastructure. Because of fiscal pressures the SOF community, like the rest of DoD, has had to make some difficult choices.

Obviously there is room for additional improvement in all of these areas. However, as one might gather from the improvements I just listed, most of the easy changes have already been made. For SOF to make any major gains from here we must consider cutting into the meat of our operational capability—something which is ***clearly*** unacceptable—or seriously consider other new ways of doing business.

What things might we consider? Perhaps we should take a hard look at our traditional missions. Are conventional forces doing these missions? Where should SOF be willing to accept risk? What missions does SOF do that no one else can do?

We should also look at how we do these missions. Can we do these missions differently? Could some of our missions be

outsourced? Could we turn to industry to support the production of PSYOP products for example? Might it be more cost effective for the private sector to provide critical expertise we find in our Civil Affairs units for short-term humanitarian and disaster relief missions? Could we turn to industry to provide overseas logistical support? Ideas like these could revolutionize the way SOF does business.

Along similar lines, we need to take a hard look at the tools that SOF uses to carry out its missions. In the past, the SOF community could afford to expend its resources to stay on the leading edge of technology. The SOF community maintained capabilities it no longer needed and pursued any course to stay at the leading edge of technology. Today the community needs to carefully select its choices. We need to eliminate marginal equipment programs, reduce our overhead costs and decrease the life-cycle costs associated with maintaining our weapons, mobility and C4I systems.

Let me conclude by saying that decisionmakers within the Department recognize that SOF are critically important to the national defense. That said, they also recognize that SOF needs to

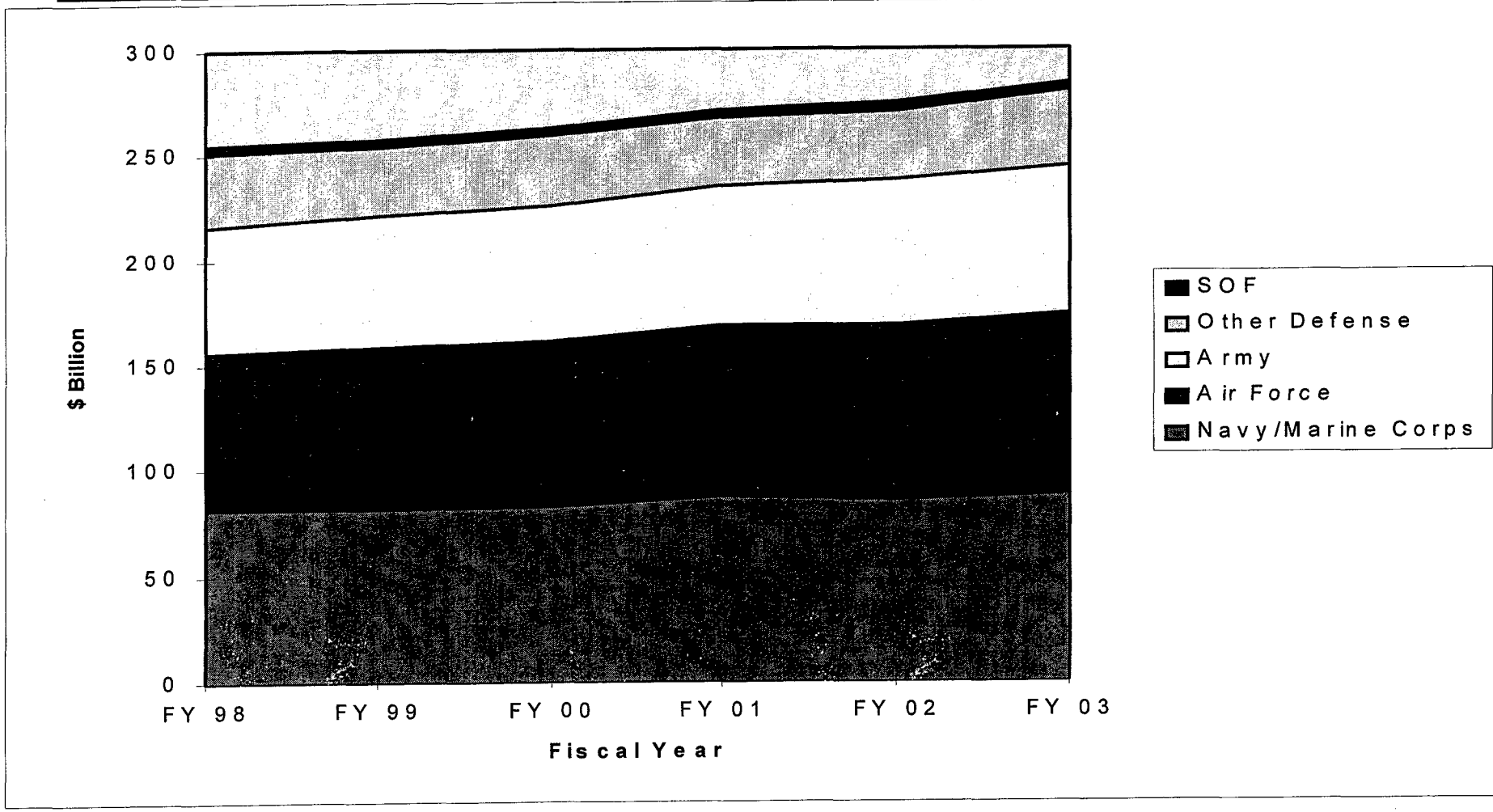
modernize if it is to remain a viable national capability. Ultimately this means that SOF will require additional funding. But before consideration can be given to providing additional funding for SOF, the SOF community must develop a better understanding of where and how additional resources can best be utilized. It must also take all possible steps to improve the use of its current funds. In this era of decreasing budgets, we can no longer afford to make decisions that only provide marginal increases in operational capability.

Let me close with a line I heard Mr. Holmes use of few minutes ago,

"The critical reality is that the choices we make today, will make the difference between success and failure tomorrow."

[Ask Brig Gen Doug Brown to make remarks]

DoD Budget


300
250
200
150
100
50
0
$ Billion
FY 98
FY 99
FY 00
FY 01
FY 02
FY 03
Fiscal Year
SOF
Other Defense
Army
Air Force
Navy/Marine Corps

Transforming Defense
National Security in the 21st Century

A Transformation Strategy --

"... We expect a modernized Special Operations Forces will play a key role in containing the transnational threats to U.S. interests, both at home and abroad."

Defense Reform Initiative

- Streamline organizations
- Reengineer business practices
- Compete to improve and save
- Eliminate unnecessary infrastructure